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ABSTRACT

This three-day conference on the subject of audio technology for the production of materials for the blind, takes the court reporter approach to recording the speeches and discussions of the meeting. The result is a three volume set of complete transcripts, one volume for each day of the meeting, but continuous in form. The highlights of each day's discussion are as follows. Volume 1: (1) an introductory speech (by Euclid Herie) touching on the history of reading for the blind and of international meetings on the subject; (2) a representative from the Royal National Institute for the blind (RNIB, UK) outlines the major forces determining talking book formats; (3) John Cookson and Judith Dixon discuss the transition from analog to digital technology, from a U.S. point of view; (4) Ingar Beckman Hirschfeldt provides information on the Daisy Digital Talking Book; (5) an open discussion touches on moderating future digital product standards; allowable data types; authoring tools; coding standards; interlibrary loan experiments; intellectual property rights; presentation and exchange protocols. Volume 2: (1) Judy Dixon and Mary Schnackenberg discuss consumer involvement in the development of the technology, including needs assessment and user interface selection; (2) The International Union Catalog on resources for the blind is discussed at length; (3) The open discussion touches on copyright issues; an international communication mechanism; new hardware and technologies for the blind; as well as many of the previous day's topics. Volume 3: (1) A discussion of time scale modification or variable rate playback is followed by recommendations for various hardware/software solutions to these problems; (2) Information exchange and an interlending forum is discussed with an eye toward the International Federation of Library Associations (IFLA) or the attendees at this meeting, and with hopes for a minimum of bureaucracy; (3) The formation of a listserv entitled "Discussions on Talking Books for Blind Individuals" is discussed; and lastly, (4) possible arrangements for continuing annual meetings on library services for the blind under IFLA, WBU, or joint auspices, closed the discussion. A complete list of meeting delegates precedes the Introduction. (MAS)

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THIRD INTERNATIONAL MEETING TO DISCUSS AUDIO TECHNOLOGY AS APPLIED TO LIBRARY SERVICES FOR BLIND INDIVIDUALS

Volume 1

HELD AT: The Canadian National Institute
for the Blind
1929 Bayview Avenue
Toronto, Ontario
M4G 3E8
Canada

DATE: April 20, 1995

CO-CHAIRED BY: DR. EUCLID HERIE
KURT FRANK CYLKE

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---UPON COMMENCING AT 9:00 A.M.:

EUCLID HERIE: Good morning. Nearly being nine o'clock we will begin. I trust everyone is here. I am Euclid Herie and I am sure if I have not met you, I am sure over the course of the next three days I will come to meet you. On behalf of Mr. Frank Kurt Cylke and the National Library Service I am pleased to welcome you to Toronto and to the Canadian National Institute for the Blind.

I will be turning the meeting over to Mr. Cylke in a few moments, but all the usual sorts of little housekeeping things that I will need to come back to you on over the next few days. I think everyone has the schedule for today, and we will be following the agenda that has been circulated, and there are no changes to that.

After the coffee break today, however, I will be asking for a show of hands of how many of you want to join myself and a few people tomorrow evening; it was billed as a night of Toronto by night with Euclid, and there is no great surprises in that. We are thinking of a couple of venues for a dinner, maybe a visit to a pub or two and then maybe ending up at a very interesting country bar that you will find quite fascinating. So, if you are not into all that then the Art Gallery and other things are available, and the CN Tower and Second City and all kinds of other good things.

Before the official opening of the meeting, I also this morning, I guess, reflected in a prayerful sort of way about the enormous tragedy in Oklahoma City with the terrorist bomb there and the disaster and the incredible damage that this has wroth not only to the lives of people but the damage. I think we all share in that.

For those who may be new to the CNIB you will come to -- I think I will give up on this mike. I am finding this frustrating. We will get it organized. The reason we have microphones, by the way, in this room is because if you are sitting along the walls there are areas in this room when people don't have loud voices that don't carry very well, so that is why we have microphones. They always seem to work before.

In any event if you are new to Canada and to the CNIB you will have an opportunity to see the campus that is here. We are sorry that it isn't hotter and brighter weather but let us hope that will improve. We have across Canada sixty-five offices, and I think there is an annual review in your material, you can read all about us.

When Mr. Cylke and I spoke about this in

Ireland a couple of years ago, I guess it was nearly three years ago because we had had two meetings with a smaller group in Dublin at the National Society there with Mr. Des Kenny, and we said well maybe if we do this again, and probably we should in a few years, CNIB in Toronto would be happy to host and help organize the meeting and we are sharing that with Mr. Cylke and his staff.

The excitement, I think, of these three days is really the opportunity of bringing together from a dozen countries individuals with leading knowledge and experience in the field of audio services, and we will be talking a lot about that in three days; but it is a truly unique opportunity to set a new benchmark and perhaps lay a cornerstone that people can reflect on in coming years to be able to say that, yes, we were at the Toronto meeting when all of this was discussed.

It is an evolutionary process. I rather doubt that at the end of three days that a firm blueprint will emerge. But having said that I think the cooperation, the sharing of knowledge, the pooling of our intellectual resources maybe in some cases other resources, to me as a blind person, as a person who depends on all of this and has for most of my life, I can assure you that you could not be spending three days more productively than the assignment that you have all come from across the world to bring to this meeting.

I congratulate Mr. Cylke for having taken this initiative, because it takes someone to spearhead these things and to bring leadership to it. It might not otherwise have been done quite in this same format and in such a timely way. So, I don't want to prolong the agenda, those are my very few and brief opening remarks.

This evening at the dinner we will have a short program and there will be a chance for you to be welcomed and greeted by our Chairman, Mr. Robert Waugh, who is our Senior Trustee in Canada, Mrs. Darleen Bogart who is hosting the evening and who is very much in that other medium to do with braille and its primacy and literacy for the blind and a few others and so we hope to have a great opportunity to all know each other better.

Now, we are very fortunate this morning to have two special guests and I am going to take three or four minutes to allow them to bring their comments to the meeting, particularly since Mr. David. Blyth who is from Melbourne who is the President of the World Blind Union and who has been on the road now for two weeks and is returning this evening to Melbourne to his other life and his gainful employment that he will not be able to join us for dinner, but will be here through lunch today and then for some meetings here this afternoon before he has to go to the airport.

And Dr. Kenneth Jernigan who is not only the President Emeritus of the National Federation of the Blind of the United States, he is the President of the North America Caribbean Region, which forms one of the seven regions in the World Blind Union and is also the President of the Friends of Libraries for the Blind of North America, of which I happens to be a Vice-President, and so Dr. Jernigan brings to this floor a great deal, not only of his own personal knowledge and experience which is considerable, but also his leadership in work for the blind throughout the world and in North America. So, Dr. Jernigan, I am not sure where you are seated, but we would appreciate having your comments at the opening of this meeting.

DR. KENNETH JERNIGAN: Thank you very Dr. Herie. I am pleased to be present here representing consumers in the United States and also in the other capacities that you have mentioned.

I think that as we approached the beginning of the next century and we look back over the progress that has been made and the present one and audio format as well as in braille, that the total communication resources available to blind people, not only in our country and this continent, but throughout the world, this meeting takes on some added significance and importance.

People thought, you know, in the late twenties, as radio began to emerge that recording was dead, you could find it in the literature all over, and yet the greatest boom in the record business was still ahead and far ahead.

People thought that reading for the blind had reached sort of an ultimate pinnacle when we had the old groove talking record that played fifteen minutes to the side. I can remember my first talking book machine which would play 78s and cut down to 45s and then you get 16s. I also remember when we had sort of a dispute kind of meeting at National Library Services when we were talking about whether we ought to go to eight and a third. Now of course the eight and a third has come and almost gone, and we are dealing with cassettes and nobody can really doubt that they are on their way out.

What I think all that means is this, that it is well for representatives of these different countries to get together and try to plan some kind of overall strategy which will allow us to unify our resources in a time when budgets are shrinking when everybody is competing for whatever money is available, for anything, then we can't afford the luxury of duplicative waste, and I think that is why this conference is important.

I am glad on behalf of my organization, the blind people we represent to be present at this and to have a chance to have some input to it. I am sure it will be a constructive and a good conference under your leadership, Dr. Herie and especially under Dr. Cylke's leadership and the National Library Services because Mr. Cylke really has taken the lead world wide in setting the pace in building a high standard for leading services for blind people, so I am glad to be here.

EUCLID HERIE: Thank you very much, Dr. Jernigan. I now would ask David Blyth if you would like to give us your comments.

DAVID. BLYTH: Thank you, Dr, Herie. I would like to echo the remarks that Kenneth Jernigan just made and I would like to add to them. The technology that we talked about today has been nothing short of magnificent for blind people, but I think we are entering a stage now, or I am aware that we are entering a stage now that technology is starting to run away from us a bit and in many ways blind people are being left behind. So it is going to be beholden on the technical people here and those who are trying to help to guide them to be aware of that fact that we must be able to harness the technology of the future so that blind people can use the fruit of that technology.

I would also like to refer to the fact that some fifty odd million people in the world happen to be blind and being added to at the rate of some several million or so a year. The vast majority of those people what we are talking about here today at this point in time is irrelevant, and I think it is beholden upon us to be aware of that and in planning the technology of the future and hear how it is going to be adopted and used for reading services and other services for blind people, that we are aware that we should be conscious that those people need to be considered as well.

For example, I would suggest that all the mastering in the future should be a viable as any other format that can be possibly used, and that is another example.

Dr. Herie, it is a pleasure to be here and, Mr. Cylke, congratulation in getting as far as you have. I appreciate the opportunity. I apologize that I am leaving today, but as my boss is sitting in the room here I am quite sure he thinks that I should be back in Australia the same as I do.

EUCLID HERIE: Well, thank you, David. That is why I emphasize gainful employment, it is wonderful. Well, thank you very much. Again, as I turn this over to Mr. Cylke, I want to say what a personal privilege it is for me as well as my organization to be involved in co-organizing all of this for you. A great deal of planning with Rosemary Kavanagh and her staff has gone into this, and I know it is going to be exciting and interesting.

I think, Mr. Cylke, if I may, I have taken the prerogative of having the chair to open the meeting. I would like to, very briefly, introduce Mr. Cylke to you because some of you may not have met Mr. Cylke before today.

KURT CYLKE: Euclid, as the fellow at the other end of the table, let me preempt you.

EUCLID HERIE: Do you want me to introduce you?

KURT CYLKE: No, I don't want you to introduce me. We all know who we are. Let us introduce each other.

EUCLID HERIE: Oh, okay.

KURT CYLKE: So with that let me, being frank and kurt let me take over the meeting. Thanks Euclid.

EUCLID HERIE: Good. I will have breakfast.

KURT CYLKE: A few logistics and then we will get into the bulk of the meeting. We have here an opportunity for everyone to speak as frankly and as intimately and as personally as they want, we will encourage that, with the full knowledge that every word you utter is being taken down by a court stenographer in the corner of the room, and will be so reported to the world. So when you speak I would appreciate it and the young lady would appreciate it if you would identify yourself on every occasion if there are comments made.

I will plan to have a transcript to you within a few months and that would include all of the remarks that you have made plus the papers.

Now for the introductions. I would suggest that we might go around the room, introduce ourselves and then I will get into a running through of the agenda and we can start with the work of the day.

If it is reasonable with you let us start and do it, not by country because we are scattered here at the table, not randomly but not by country. So you will have in your hands a list of the people who are signed up to come today. There are a few omissions. If your name is on the list, your name would be enough and an identification of your country. If your name is not on the list I would appreciate it if at some point during the next couple of days you would give to me or to the court reporter a slip of paper with your name, full address, telephone number, E-mail, address and so forth on it. So with that, Rosemary Kavanagh would you start and then go around the room.

ROSEMARY KAVANAGH: I am Rosemary Kavanagh, Executive Director, CNIB Library for the Blind.

JOHN GRIFFITHS: John Griffiths, RNIB.

CLIVE LANSINK: Clive Lansink, Manager, Computer Services, Foundation for the Blind in New Zealand.

MARY SCHNACKENBERG: Mary Schnackenberg, Manager, Library Services, Royal New Zealand Foundation for the Blind.

JUDITH M. DIXON: Judy Dixon, Consumer Relations Officer, National Library Services.

INGAR BECKMAN HIRSCHFELDT: Ingar Beckman Hirschfeldt, Director of The Swedish Library of Talking Books and Braille.

BLAITHIN GALLAGHER: Blaithin Gallagher, National Council for the Blind of Ireland.

DAVID BLYTH: David Blyth.

KENNETH JERNIGAN: Kenneth Jernigan.

JOHN COOKSON: John Cookson, Head Engineering Section.

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CHRISTOPHER DAY: Chris Day, RNIB.

DAVID MANN: David Mann, RNIB.

STEPHEN KING: Stephen King, RNIB.

EUCLID HERIE: Euclid Herie, CNIB.

MR. CYLKE: Mrs. Jernigan.

LYNN LEITH: Lynn Leith, CNIB Library for the Blind.

WELLS KORMANN: Wells Kormann, Chief Material Development Division National Library Services.

LARS SONNEBO: Lars Sonnebo, The Swedish Library of Talking Books and Braille.

JOHN SIMPSON: John Simpson, I am with the National Federation of Blind Assistance of Australia, also involved with a project looking at merging some of the library services in Australia.

JON ISAACS: John Isaacs for the Royal Blind Society of Australia.

HIROSHI KAWAMURA: Hiroshi Kawamura, Japan Braille Library.

JAAKKO RAISANEN: Jaakko Raisanen, Finnish Federation of the Visually Handicapped.

KJELL HANSSON: Kjell Hansson, The Swedish Library of Talking Books and Braille.

SUSANNE SEIDELIN: Susanne Seidelin, the Danish National Library for the Blind.

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DOUG KENT: Doug Kent, Royal Victorian Institute for the Blind.

KOEN KRIKHAAR: Koen Krikhaar, Student library, Amsterdam.

MATTHIJS BALFOORT: Matthijs Balfoort, Student Library, Amsterdam.

RICHARD N. TUCKER: Richard Tucker, Students Library, Amsterdam.

KURT CYLKE: Fine. And as I say, those of you whose names are not on the list, please give me a slip or give the young lady a slip with the details.

A funny thing happened on the way to this meeting, and the funny thing is that there are so many people in the room. Let me tell you a bit about the history and then get into the agenda and see if you have any comments and then get on to work.

Some years ago it occurred to me, not a brilliant thought, but it occurred to me that obviously that we would be going into another audio transition some time in the future and it would be desirable at best, as David Blyth said, to have a standard mastering medium, but to have the hardware be compatible. That we had two tracks one and seven eights, the two tracks 15/16s, the four track, 15/16s, the four tracks one and seven eights, eight and a third RPM discs, open reel tape, Clarke and Smith broad tape, wire, and it was just a melange and it all came up individually. So we sat down and I said, who made these machines? And the RNIB was in the business and we were in the business. The majority of the rest of the world that it appeared bought either off the shelf or from us or from RNIB, so I said, why not sit down with RNIB and the US and have a conversation. Canada became involved because they were the closest and the largest purchasers of our equipment and the reason we ended up in Ireland was that in a conversation with the people at RNIB it came out that they had never visited the Irish Library for the Blind, and being Irish myself I thought it would be an interested and somewhat humorous event to hold a meeting in Dublin so that is where we went.

So that is where we went. We held our first two meetings there and I think they were fairly productive. We agreed that the last time that we met, three years ago, that we would gather together here in Toronto and again share experiences with John Griffiths and -- well, I don't want to mention names because I would have to mention everybody's name, but with the engineering people and the people who are doing the technical work to keep us abreast and to make sure if we were going to go apart that we knew that and it would not be by accident and to come together where we could.

So with that I contacted Des Kenny and Blaithin and Euclid Herie and Rosemary and the people at RNIB and set up a meeting in the room, and then suddenly all the rest of you started to write to one of the two of us and invite yourselves and you are all welcome, but I guess I am somewhat confused as to why we are here. And what I hope doesn't happen and this is why I am raising this is that the agenda go off to subjects other than what we are here for.

What we are here specifically to talk about is audio technology for the production of materials for blind, and in our case, physically handicapped individuals, and those things which relate to that specifically.

We have had some suggestion from a fellow, there was a fellow from a museum who had a museum narration system who wanted to come in, there was a manufacturer, there were several manufacturers from around the world who had specific products to bring in and we kind of pushed them aside and said it wasn't appropriate.

Now, with that very brief comment about why we are here let me just run through the agenda so you will know what is in store for us for the next few days.

Immediately following my remarks which will conclude in about three minutes, we will ask everyone to make a comment from the point of view of their country. And again I will leave it open so that if you wish to have only one representative speak that is fine, if you have more than one position that is fine. What is your national perspective of what you are doing, where you are going, what comments you would like to make. We will conclude that segment with the United Kingdom. The reason for that, not only does it come out in alphabetical order but there is a fairly detailed specially prepared paper which RNIB has put together and we will enter in that discussion at that point in time.

Then following the break, John Cookson of the Staff of the Library of Congress and Judith Dixon will present a paper from our point of view, the American point of view, the transaction from analogue to digital technology. So you will have both these papers. Then a discussion, then lunch. The only sticky thing about sticking to times and so forth, I believe, will be the breaks and the lunches.

Then the Daisy Digital Talking Book System. That is an interesting topic. I am going to be expressly interested in where the name Daisy came from, because when I thought about it I thought of Allan

Ginsberg one of the great poets and that wonderful poem he had, "Pull my Daisy" if those of you were of that age and remembered the 60s and so forth, and I didn't know if Ms. Hirschfeldt was a fan of Ginsberg and trying to get a literary illusion here, but I don't know. We will go on with that.

Then you will see an open discussion with John Cookson moderating future digital product standards, general model, allowable data types, authoring tools, presentation protocol, coding standards, interlibrary loan experiments, exchange protocol, intellectual property rights guarantee, cost, schedule, testing, report, in a tour. Then tonight's library reception.

Then tomorrow we gather again here in this room and Judy Dixon and Mary Schnackenberg from New Zealand will present a paper called Consumer Involvement in the Transition Process.

Then Bibliographic Control: Status of the International Union Catalog, that is the NLS, International Union Catalog. And then Interlending, Sales and Gifts. This is an appropriate point to have any discussions about copyright that you might like to have.

My ears are big, my head is broad and I hear rumours coming back from Malaysia, from the UK and from

New Zealand and from Australia and all over the world about the importance of the copyright matter. We don't want to turn this meeting over to a full copyright discussion, but when you get into interlending sales and gifts it is not inappropriate to have it come up at that point.

Then an open discussion, tour of the resource centre and then you go out on a wild evening with Euclid ending up in a country bar or somewhere, you said Euclid, with line dancing. Jaakko, I think we had to, well, maybe it wasn't Jaakko, but I think it was and if it wasn't just don't tell them it wasn't. I think when Jaakko came to Washington we had to search out a country western bar and provide him with a cowboy suit and cowboy booths and all, but his wife is with him this time. But it is a secret so nobody should tell her that we did that.

MR. HERIE: Bronco Billy's

MR. CYLKE: Right. And on Saturday we will meet in the hotel at the King Room. That is in honour of our UK associates. And there will be topics suggested. I think that at the close of tomorrow's meeting you might be thinking about wanting to list some topics and give us at least a night to think about, so why don't you put it in that area. Then a working lunch.

Everyone in the room should have print copies of all papers. Those people who require braille should have both print and braille copies to make it easier for me, more difficult for you, you have a copy of every paper in front of you rather than at the time that it is being presented, and the one exception to that is the Daisy presentation, and that will be distributed.

Before we go into the list of countries and the comments on audio technology, are there any comments that you would like to make? Any remarks at all will be welcome.

Okay, with that we will start with Australia. And I will let Australia decide through some sort of mental gymnastics who will come first, second and third.

JON ISAACS: Okay, let me lead the tumbling. Jon Isaacs for the Royal Blind Society in New South Wales. Very quickly. Australia is in the process of uniting two of their major talking book libraries, the Royal Victorian Institute of the Blind and the Royal Blind Society in New South Wales to become the major national talking book library.

We aren't ourselves making any investigations into new technologies, but we are delighted to be part of this process, and Kurt, if I could just say congratulations to you on your foresight to have this conference.

We earlier this year had a visit from John Cookson which proved extremely beneficial and was important in saying to Australian agencies and consumers that this process is an open process and that all countries are welcome to participate in it, and we will do so and we are very happy to participate in any of the experimental or research developments that take place. Thanks very much.

KURT CYLKE: Is there anyone else from Australia who would like to speak? Canada?

ROSEMARY KAVANAGH: Let me try with this mike and see if it will perform for me if nobody else. When we looked at the situation with respect to audio technology we took a fairly long look down the road and we saw that there would be, whatever we did, continuing and overlapping technologies no matter what. You would still be using what you did in the past and you would still be moving towards the future. So we see a variety as the present trend indicates that we may not be able to supply equipment free.

I am not saying that we have made any decisions about that, I am just saying these are some of the things that we looked at, and certainly not at the present levels of funding or at the present levels of cost, so we are hoping that in the future some of this will become more cheaper and more affordable.

So we see the opportunities presented by the future miniaturization of data to save substantial costs and service delivery. We have a rough sense of what those savings might be and we also have some sense of where we want to place those savings as well. So for us some of the directional changes in audio technology won't present us with new opportunities.

We know that we have to secure and evolve the kind of infrastructure that would take us into those directions, and so we took very seriously the message of our earlier meeting in Dublin with regards to moving towards digital format. Since then we have managed to install two DATs for master recording with a quarto hard drive for editing and archiving.

At this point we have completed our first collection entitled Dat Master Recording. It is a book called Winter by Piere Burton. And we have also began our first archive of an old collection piece, a classic in fact which is the collective points of Robert Service. It has begun to deteriorate so it was a great opportunity for us to do something with that; initially it was something that was recorded after the second world war and so we have started to put that into digital format. We will insert the tone indexing digitally as well.

The next challenge for us is to develop between our collections and productions and of the operation an archiving plan for what portions of our collections will be moved into this format.

Lynn Leith our manager for the studio is part of this conference, so if you need to talk to Lynn in greater details about this she is available. She has made herself available for a short demo between 1:00 and 1:30, it is over lunch if people want to take that opportunity to do that. There is also another session on Monday at 2:00 in the studio.

So I think, essentially what we are saying is we are definitely moving towards digital recording and moving our collections into that format and we see the future as one where we should be able to respond in whatever format our users require. Thanks.

MR. CYLKE: Denmark.

SUSANNE SEIDELIN: This is Susanne Seidelin from the Danish Library for the Blind. First of all I must say I am very pleased to have been able to attend this meeting, because I think we are all normally at the same stage here. We are moving towards a new area concerning technology. I think it is very important that we share our thoughts and we share our knowledge and find a way to move towards the new technology where we can secure that the interlending system is still working.

At the Danish National Library we have to change our analogue format to the digital recording system before the end of 1998 according to an agreement we have with the government. You could be a bit nervous about that, because we are in a state right now where we are asking questions more than we actually come with answers. Also, therefore, it is important that we can share our thoughts.

One of the questions we are asking is the requirements for the digital recording system. It is very import to ask if we have a system to run very quickly and can produce a deadline production, because what we are producing at the Danish Public Library is not student material, it is a daily newspaper, magazines, deadline books, talking books for the blind and things like that. But we are also asking ourselves what would the new user format be? How would the new user machine look like? And in the end how do we have a system which would be able to produce good quality for the sound? At least this is what our technician are very worried about.

We also, I think all of us share the problem of what to do about the old analogue master tapes. They should be able to be transferred to a digital format, and we all know that books take time and cost us a lot of money. But we also know, and I am sure a lot of you had the same problems, that we are running out of time about the old analogue master tapes because they are damaged. At least I know some of the countries have that problem and we do have it. I think that is all for now.

MR. CYLKE: Thank you. Finland.

JAAKKO RAISANEN: Thank you very much. We in Finland have two talking books systems in use. One is the Clark Smith Mark 4 System and the other is the standard compact present system.

The patrons now a days are very content with the current system, which we keep in good conditions as possible. The old patrons especially like the Clark Smith system because most books can be recorded on one cassette consisting of twelve hours. Of course the views of the Clark Smith's Mark 4 system is depending very much on what RNIB is going to do in England during the next years, but when something happens with Clark Smith we can very easily change to two track or all productions change to standard two track system.

We can say in Finland that we are not in that position, we can continue with old analogue system. But originally people in Finland are of course very interested in the future of talking book technology, they hope that they could, at last, take the full advantage of the newest technology available in the commercial market.

To speak of the development of audio technology is however confusing all minds. All their minds and of course of the staff. Their common view is CD technology could be a possible solution, but some say also that one should wait for the development of solid state memories or even on line access and distribution of the talking books.

We of course follow in Finland very carefully what the technical development, and we will make many experiments, for instance the Swedish Daisy CD ROM system and also we study CDI technique and even this production, that means next summer in Helsinki, the telephone company in Helsinki will start so called media demand experiment at over thirty households, and we are very interested to take a little portion of that, our talking book demand, a little experiment.

We in Finland have two groups of the patrons of the library of the visually handicapped, one group is the students for whom we must have so advanced a technology as possible in order to help in their studies; and they are of course, the students, very eager to learn complicated technology.

The other and the biggest problem, is of course the library patrons whose average age is about 75 years. They don't want any complicated technique, they have personally said to me that we want to have very easy technique as possible. They have collected some requirements which they want from the future talking book system. The future talking book technology must be based on the open and commonly used holding and distribution media. The talking book playing machine must be commercial and available in the high stream.

There should be fifteen to twenty-five hours at least spoken material on one media unit. That media unit can be of course whatever future use bring. But the playing machine should be so easy to use as possible. So good index systems as possible. Thank you very much.

MR. CYLKE: Thank you. Germany? I don't believe that Rainer Witte made it today. Blaithin.

BLAITHIN GALLAGHER: My name is Blaithin Gallagher from Ireland. it certainly makes a change to get out of Ireland for these meetings. In Ireland we are using two formats. Our users of the library have access to the RNIB and Talking Book System and we record with the four track US Library of Congress System. We have got a very small number of users in the library. Our equipment will soon be updating, we will be holding off a lot until the developments in the technology market settle down, and we will just wait and see what this conference brings.

MR. CYLKE: New Zealand.

MARY SCHNACKENBERG: My name is Mary Schnackenberg, and I would like to thank Kurt for the opportunity for my colleagues and I to be here. I manage a library at home. Clive Lansink is our computer software developer and Clarry Schollum, who will be here tomorrow our senior technician.

In New Zealand, traditionally we follow the British talking book system and use the Clark and Smith system, as Finland still does, until 1986 when we switched to the Library of Congress four track cassette format. We are keen to be present during the discussions of future technologies, one of the inhibiting factors for international exchange is the variety of formats, and it is now hoped that if varieties of formats have to be retained in the future then at least the mechanism for shifting from one format to the another will be simple, a lot simpler than they are now anyways.

So we look forward to the conversations over the next few days. I noticed at the end of the agenda it says "There is no more." I certainly hope that that is not so, and we will be doing our best to participate in the ongoing future development so that all may read, whatever country, no matter what the formats. Thank you.

MR. CYLKE: Sweden.

INGAR BECKMAN HIRSCHFELDT: The Swedish library we call it for short TPB, is a government funded library. We have the responsibility to the government to follow the technological development and to implement new techniques where appropriate, and we have to report our proceedings every year to the government.

TPB strategy is to use our study department as an experimental station to find out what is possible and what the readers want. We have let Lars Sonnebo here make a overview of techniques for digital recording of talking books for persons with reading difficulties to start our talking book project.

Daisy, the result of the project we will show you later. Here I will only point out how important we think it is with an open standard and the possibilities for international cooperation.

We start producing digital talking books for twelve students this autumn and we plan to start regular production of digital masters in 1997 and at the same time start to translate parts of the existing analogue cassette masters.

TPB has today 45,000 talking book titles, it will take time and money. We have founded money and digital master say both place and money.

Distribution cost could be much cheaper with digital audio books and we think that we will find money there too. Today the Swedish government pays 60 million Swedish crowns for free distribution of cassettes and braille.

We must also find new ways to distribute radio, telephone and television. The culture department in Sweden is going to put a lot of money in digital station of the latest distribution system. So I can't see that your talking book system is so very far.

How and when and if we do something new is also depending on what the reader think of all this. We have chosen to focus on the advance reader so she can be a forerunner and because she has the biggest needs.

The twelve students this autumn who will start to use Daisy books will be most important for our future strategy.

MR. CYLKE: Thank you. Just a few comments before we get into the UK program. I just want to make it very clear where the United States stands. You will hear about the future in a few moments after Stephen King's presentation. You will hear from John Cookson and Judy Dixon. We are constantly being asked, when are we changing? When are we changing to compact disc? When are we going to make the move? And I think everyone should hear from me what our status is.

We are planning no immediate change. We have a problem and the problem is one of size. We have fifteen million copies of books in an analogue format, several hundred thousand titles. We have eight hundred thousand talking book machines scattered around the country. We have a user group of approximately half a million individuals.

We costed it out a few years ago and so it will be a different cost than those who heard me make these remarks before, slightly higher, but if we change tomorrow to a compact disc system and change all our software, which we never would do, but I mean if you did that you are talking in the neighbourhood of a $450 million change.

Now, if you examine what we have with our four track 15/16 cassette system, we have a system which works, which is acceptable to the user, which has problems but are minor problems when you reflect. So we say we should stay and when we make a judicious decision to change then that would be the time. Fortunately we are not under a mandate from our government to change in three years, because I don't know what we would do in a situation like that. We would look out and we will say, and I believe I can say this with some finality, we will not be adapting a compact disc system. We will be adopting a system which does not exist at this point in time.

To David Blyth's remark earlier, he is absolutely correct, there is a plethora of devices on the market, there is a plethora of systems in the market, the market is going and we are not there. We were there earlier on. In other words from the initiation of the record, and we were in the forefront. At this point we are sitting back, our decision is a much more expensive decision, has a significant impact on the lives of individuals and we are following the technology and we will take advantage of it.

Indeed we may be, as Jaakko says, in the business of wanting to buy on the high street rather than build our own machines, we are in that kind of a situation. So the only change that you will hear about, people will whisper about is from our disc.

Now, we do produce eight and a third rpm disc for our magazine productions. We circulate approximately ten million copies of these, and we are entering into a study of conversion of the eight and a third rpm disc to the 15/16 four track cassette, so our whole system will be the cassette system, but we are not contemplating any change at this point.

All right, that ends our rundown with one exception, the RNIB. At this point I will turn the meeting over to you Stephen.

STEPHEN KING: My name is Stephen King from RNIB. You have in the pile of papers in front of you a paper which is actually a combination of about three or four internal RNIB papers which we have cobbled together for you, which you don't have to sit and read now because I am going to talk a little about it, but you may find it useful to read, perhaps overnight and that would help inform you about some of our thinking within RNIB.

So I shall not be referring to this paper and you don't have to sit and read it, but in there is a lot of the background thinking and quite a lot of the detail, detail answers to quite a lot of the questions that you might want to ask. Looking at the time I probably will speak for maybe seven or eight minutes and then perhaps we could then open it up for some further discussions. I think that is probably the best way.

RNIB has been involved in looking at a new generation of talking books now since, and John Griffiths will tell me about 1986, where we started to consider what comes next. For those of you who are not aware, RNIB runs nearly all the systems of talking books that have been talked about in this room.

We have a leisure reading service, a high volume talking book service which is based on the system called Clark and Smith, which has been called Clark and Smith in this room, and that has the advantage of having a full twelve hours of recording on one cassette and is simple to use, particularly for the target market of the elderly visually impaired people. But we also run libraries based on compact cassettes both two-track and four-track and our objective is to give our clients what it is that they require in the format that they require it.

When we have been considering digital talking book formats, there have been three driving forces for us. I think the first and most important one is that the existing formats of talking books are inadequate to provide some of the access to information that visually impaired people want.

If you look at the public library service and the loan information, one of the largest areas of the loan is for cookery books and gardening books, and if you look at how elderly people spend their time, studying religious texts is another very large area of personal activity. Tape based systems are inadequate to support that type of activity. So, for example, if you want to cook and if you want to bake a chocolate cake and if you want to look it up in your favourite recipe book, if you talk to any of your visually impaired colleagues and you ask them how easy that is to do on the tape based system, on a tape of a cookery book it is not an easy thing to do.

And secondly in the area of study on professional information, structured access, access to a dictionary, access to an encyclopedia of a medical encyclopedia, access to legal textbooks, where you want to go in in a structured way as opposed to read from the beginning to the end tape based systems are inadequate.

So that is our first driving force as to why we have been looking at digital technology as a means of overcoming those problems and enhancing the services that we can provide.

The second reason that we have been looking is cost. When you analyze the costs of the services that we provide the cost of distribution and the physical cost of cassettes are very substantial parts of the overall costs of the system and we believe that by moving to some of the new distribution medium based on compact disc we can substantially reduce those cost and then recycle that money to enhance the services that we provide.

The third driving force for the reason by we have been looking at digital technology is probably the reason why RNIB in the United Kingdom have been looking more accurately, perhaps, than many other countries and that is that the existing system that we are using is beginning to come to the end of its natural life.

Tape base systems, accessing the materials and parts to maintain tape based systems is beginning to become more increasingly expensive and it is becoming a minority format and, therefore, we believe we are at the bottom of the cost curve for maintaining our overall system and over the next decade those costs will start to increase as it becomes more difficult to find appropriate materials.

We also know, just because of the way that we as an organization have to operate, that any change from one format to another may take us a decade to achieve from the time that we start to change to the time that we complete a change may take ten years. Therefore, we think it is important to start that process soon so that we don't have to manage such a process in a crisis situation where our existing systems is rapidly becoming unsupportable.

For that reason, since 1986, RNIB has been looking at and experimenting with compact discs based systems, and three years ago we built twelve CD ROM based players and we recorded six different types of books on a CD ROM discs and we spent a year placing those out in the field with clients, and we had a full-time person working out in the field, working with patrons, letting them use the system, getting their reaction and getting feedback from that set of field tests.

The prototype players that we built were, as we have said, very much prototypes. Our interest was to find out more about how people react to CD based players, how they can use structured access, what are the advantages and what are the disadvantages, and we wish to find out more information.

We concentrated on the simple books and in general if you segment the market into elderly, newly visually impaired people and into students, our testing has been in the area of elderly visually impaired people looking at leisure reading. We have spent the last eighteen months getting information back from that field test. And about a month ago we completed that test and we now have that information back.

Overall, the response from that client base has been very positive and have led us to, reinforced us in our belief that this is an appropriate way forward. They appreciated the quality of the sound and the clarity of the sound, and they appreciated the simplicity of control, they appreciated some of the simple features that one could build in to such a player.

So that is as far as we have got. During that time we have continued to investigate the technology. We have been considering CD ROM, we have been considering CDI as an appropriate distribution technology.

We have been following with interest the Swedish project, the Daisy project which we find extremely interesting in terms of tackling the issue of presenting structured information and particularly presenting information for study and for learning and also the techniques that are being developed there for compressing speech and for file formats.

We have been discussing with manufacturers both in Japan and in other countries to study the potential cost and put together a potential system that we could consider, and we have been looking at the financial and operational logistics of changing our own format and introducing a new library and have started to come to some conclusions on what that might be. Most of those conclusions are set out in that paper that you have in front of you, and I shan't go through all of those because most of them are peculiar to the situation as far as the UK is concerned.

I would just make a couple of other remarks. I don't think anything that RNIB is doing is actually in conflict with any of the points that have been raised today. All the points that have been raised about the cost and ensuring that there is an open format and ensuring that people can purchase their own players are all things that we share.

The vision that we see in the future is that the distribution medium by which people will read audio books is going to be a lot more complex in the future and we have to recognize a future whereby books will be distributed in many different ways through many different formats, well, we know that they will continue for many years yet to be distributed on the existing tape systems in all variety, we believe there will be new compact discs systems both the ones that are here now and the ones that are coming around the corner. We have heard about Solid State, we also know that there will be distribution over the wires and via broadcast.

So we are trying to develop a strategy which will equip us for that future, but we do not believe we should adopt a strategy which fixes us into one sole distribution media.

So, we need to separate in our thinking the recording, archiving and interlending aspects whereby we develop and in almost one project they are separate things. The recording archive and interlending is one aspect and the second aspect is distribution. We suspect that the distribution system is going to be different depending on the situation in each country, both in its history of where it is now, the geography of the country, the nature of the distribution system and the partners who are involved, all of those will mean that each country is likely to have different distribution systems.

We do believe it is very important for us at an international level to try to agree on the standards for recording, for archiving and for interlending because that will mean the future, as our colleagues from New Zealand expressed, all may read anything from anywhere in the world in a simple form. I think it is our responsibility to try to achieve that vision.

So that is the vision RNIB is working towards, and some of the detail of that is set out in this paper. We believe that we will be working with a number of colleagues from a number of countries who have different interests in different aspects of the projects that we are working on and we would like to work with people.

In terms of the pace of change as far as the United Kingdom is concerned, we probably will want to move at a slightly faster pace than the Library of Congress because of the particular situation that we are in as far as distribution is concern. As far as recording and archiving and interlending is concerned it is quite probably that we will maintain the pace.

I think those are the points I wanted to make and at this point I will stop speaking and allow people to make comments and perhaps promote a discussion.

KURT CYLKE: Are there comments? Questions? I think you have just given the perfect piece. Yes, Mary.

MARY SCHNACKENBERG: I have one question for you of immediate importance, Mr. King. Do you have an alternative format copy of your report? It has been distributed in print only and those of us unable to read print around the table would really appreciate an alternate copy if that is possible.

STEPHEN KING: We have an audio version with us and we also have a copy on disk copy with us.

MARY SCHNACKENBERG: Disk is preferable.

STEPHEN KING: Disk is preferable. Okay. So we certainly have a disk copy with us. We can make some copies of that.

JUDITH DIXON: Could we get some copies made of the disk?

STEPHEN KING: Yes. If people would just identify to either Rosemary or myself or John Griffiths, we will make some disk copies.

KENNETH JERNIGAN: I wonder if we could get one in braille?

STEPHEN KING: Yes, we will certainly arrange for that.

KURT CYLKE: Anyone else?

JOHN SIMPSON: John Simpson from Australia. Stephen, I congratulate you on your presentation and I certainly don't disagree with your conclusions about the issues of access to information using the CD format and so forth; and forgive me if this is covered in your paper, I will accept that as a suitable answer and I will go and find it.

It seems to me that when you were speaking though, that you moved from a taped format where I understood you to be talking about an analogue type format and I agree with the index limitations there with no time coding and so forth to CD, but you didn't comment on the alternatives in between that such as a time coding track on an analogue recording or in fact a format such as that type which would provide in a type format the same sort of access capabilities, or at least not of the same sort, and this may be your conclusion. But there are possibilities between the analogue type and where you have got to, and perhaps you can just touch on your work in those areas.

STEPHEN KING: Sure. I am very happy to do so. If you wanted a more detailed discussion both my colleagues John Griffiths and Chris Day are much more expert in this area than I am. The short answer is we believe that rotating disk provides the best means of random access. In other words one can quickly move from one point to another.

And secondly, as far as distribution is concerned, we think it is going to provide a much cheaper method of distribution, so, for example, we know one can press disks now; and I will try and think in US dollars just to give you sort of a medium, one can now compress disks now for less than 50 cents. So in terms of the absolute cost of the medium going out to people one is talking about a very low cost medium to provide between twenty and fifty hours of recorded material.

So, the reason that we think that rotating disk is the right medium over tape based systems and taped based digital system for distribution maybe not for archiving, but for distribution is cost and the ability to quickly access the full twenty-seven or fifty hours of program material that would be on that disk.

KURT CYLKE: I have two questions. Are they going to be throw aways? In other words when you produce the disk and provide it to the user does the user keep it, or does he or she return it? And if he does or she does what type of storage and handling and so forth that would be projected?

STEPHEN KING: It is a very perceptive question, and we don't have an answer to that. Because some of the economics say it makes sense to do it one way, you just send out the disk and not ask for a return. But for other reasons both of copyright control and there are other economies that the caddies and carriers that one might put a disk in, you might have a return system. So we haven't made any firm decision on which one. And obviously you would build an operational system slightly differently.

KURT CYLKE: In other words from our perspective we use both, with our flexible disk magazines, they are throw aways, they don't come back, and with our cassettes they do come back, but it was in that vein.

STEPHEN KING: We haven't made any final decision. We are, I think, a lot further away than people might think. What we have been doing is modelling alternative distribution systems and looking at some of the alternatives.

KURT CYLKE: And then the play-back machines will be provided as the machines are provided now in the UK, with the individual buying his own or the local social service unit providing it, or are you going to be providing the units? The next question is; what is the cost of the units as you project?

STEPHEN KING: Two answers to that. We want to move to a situation where the individual can provide their own player to the design that they wish. So if we provide a yellow one and the individual wishes a blue one or if we provide a big one and the individual wants a small one then the individual can provide their own player. But we also, because of the nature of services in our country, would be in a situation where we as an organization would provide a player.

We do know that we can build players for the same type of price as the existing tape players, and in fact potentially considerably cheaper because the parts are now much more easily bought in because there are a larger number of CD players being built these days and far fewer tape base players being built these days.

KENNETH JERNIGAN: Mr. King, I should think that if you can truly provide the material at something close to a penny an hour, if I heard you correctly, that the real question on whether you should give it to the reader to keep or to return it is not an economic question as much as it is a psychological question. That is the feeling on the part of governments and donors that there is something innately wrong about giving something to somebody, and that what you really need to do, therefore, is to get a psychologist and not a economist.

STEPHEN KING: I think that is a very perceptive statement. Just to make that clear in terms of the cost of the medium being a few cents per hour, the cost of pressing out a medium is very small.

Obviously the cost of that recording and putting on the program would make that cost quite significantly different.

In principle we think that for sort of leisure reading services one would probably, for the reasons you articulate, talk about a return system. But for magazines and peripheral information one might have a one-way system. And that, for example, is how we now work with tape for magazines and peripheral stuff we tend to use low quality tape in one direction and don't ask for it back, but the study material we tend to ask for it back.

KENNETH JERNIGAN: Just one follow up to that. I would think that you are going to have the same cost in recording whether your pressing is high or cheap and that the cost, if you have any volume and you would in the United Kingdom, makes it so that the argument still comes back to the fact that it is very inexpensive and that it is increasingly expensive to store material. Therefore, what you might ought to consider is not simply because people feel as I have described earlier that you ought to return the material, but that you ought to begin to change the perception and that in the long pull you will have a far more literate public that you are dealing with and you will also have people with their own reference collection that would take very little storage space, and therefore in the short run might be better off indeed to bow to the current whim and traditional notion, but that in the medium length of time you and your public would be far better off, and indeed your donors, benefactors and government would thank you for having pioneered in the effort.

STEPHEN KING: I couldn't disagree with any of that.

ROSEMARY KAVANAGH: I just wanted to comment on the business of a return system. When we were thinking this through this was a concern for us as well but there is a lot of politics, as you are aware, and copyright and we don't have to do anything immediately so we have some time to think about all of this.

However, we felt that there really was no point in trying to return, for example, CDs because you would have a great difficulty controlling your copies of your collections when they would be all over the place in thousands of different households and so on. So that was part of the advantage to us of not having a return system which you then had to keep track of. And your overdue system disappears, your storage systems significantly reduces in terms of the cost and the amount of space required.

So there are some major advantages to moving towards the new technology and looking at some of the actual operating costs that are impacted.

JOHN COOKSON: One of the concept that is constantly mentioned here is the concept of cost and as an engineer that bothers me a little bit that it is not really nailed down. Part of our program is development of a cost model. And we are never going to get large funding increases or changes unless we have a compelling, cohesive cost model.

I propose a cost model which in simple terms would typically consist of some kind of a spread sheet that indicated your cost over time and might demonstrate how one technology may be increasing in cost, another one may be decreasing in cost and so you get the magic cross over point where you get people's attention and so on. Any cost model that you propose or any number you put into it maybe someone will take exception to, particularly the people who provided the funding.

And there is uncertainty on the part of the person who create the model as well so there are mechanism for doing it. But my question is, do you have a model that I can use?

I have one that I propose and people look at it and until you try to use it as a vehicle for funding they would just say, "hm'mm, well it looks all right." Or they ignore it. So I am asking if somebody have got a better idea on how to manage cost model or how to create one or how to manage uncertainty or how to use it as a convincing tool or a useful'management tool or something that an engineer can use show, well here is where we are heading cost wise, let me know.

ROSEMARY KAVANAGH: There is politics in costs.

JOHN COOKSON: You had indicated that you have some feel for the way your costs are moving. Do you have a cost sheet?

STEPHEN KING: Yes. Within the paper you have here there is actually a pile of other papers within some of those other papers are some more sophisticated analysis of costs. I will be happy to give you some of the ways that we look at costs. I think Rosemary's point is actually quite important because it depends upon where your funding comes from and how you look at funding, how you present costs. One of the other activities that we have been doing is talking to founders, presenting costs in a variety of different ways appropriate to that funding institution.

My argument on cost is always, why do you want to know? And then we would work out what the costs are.

But in principle we actually do see a situation whereby we can manage the annual costs wouldn't change, because as I have indicated earlier on we are talking about a situation where from the time we start to the time where one has a completely new library based on a complete new system that may well take a decade.

At any point in time we are continually spending very large sums of money on players. We are continually spending large sums of money on recording; we see the cost of using new technology actually reducing those costs and therefore we can actually recycle that money to fund the overall change from one technology to another, and therefore that is the type of model we have been trying to develop to show a funding program, which actually doesn't change over a ten year period.

JOHN COOKSON: Well, if you could that that would be a winner.

EUCLID HERIE: Mr. Chairman, on that note if we could just pause a moment for a break, if this is a good time.

KURT CYLKE: That is fine.

EUCLID HERIE: I think it is remarkable that we actually went 65 minutes before anyone brought up money. It could have happened sooner. I just want to mention just a couple of things.

---MORNING BREAK:

EUCLID HERIE: Go ahead, Kurt.

KURT CYLKE: All right, go ahead John. John Cookson.

JOHN COOKSON: As a young lieutenant in the US Navy I spent a lot of time on a ship patrolling the coast of Vietnam during the Vietnamese war and one of my collateral duties was a cryptographic officer, and a crypto officer spends a lot of time in a tiny cubicle that is located within the radio room in the ship, reading a book actually. But this cubicle has a door on it with louvres and you are able to observe what occurs in the radio room, so one night I was reading a book and suddenly over the ship's intercom or squawk box we heard; "radio, bridge this is the captain, can't you guys hear all that static on the primary tactical circuit down there, do something about it." So the two petty officers sitting on the deck playing cards one of them jumps up and runs over to the squawk box and said; "Yes, sir, captain we will get right on it." Then he motioned to the other petty officer to stand up and the two of them went over to this large rack of radio equipment with nobs and dials and lights on it and the two of them stood there, they put their hands over their head and they bowed to the thing and they said, "static go away, static go away, static go away." Then the first officer said, bridge, radio, how is that captain, better? And then we hear, that is a lot better now, pay attention, keep it tuned in.

Then the two of them went back and played cards. And by way of metaphor that is precisely how we do not propose to deal with the evolution of technology. We in fact propose to take a very active role, a very proactive role and understand all its implications and act accordingly.

One of the things that excites me here is the recognition that there is a great deal of commonality of purpose, a consensus, I think, on the general direction that we are heading. There is agreement on major features of future products. I was delighted to read the RNIB paper and the Daisy paper and our experience with Daisy, and we recognize that there is a great deal of overlap in our thinking and these are the kinds of things that I hope we can build on here in a very specific technical way.

This morning Judy and I are going to present this paper which is perhaps a little bit except for the absolutely true story about the static, is a similar case but it does give us the conceptual framework that we are looking at, and I think that is important.

It gives us a general structure, a logical planning, a general structure for our strategy, and I hope that in the afternoon that we can perhaps get down to a little more nuts and bolts, although if we don't get down to the technical nuts and bolts at least we can decide how one deals with those issues or decide what would be the appropriate form, or how do we get at some of the really tough technical problems involved in digital products.

Since we are on the kind of a theoretical level this morning, from my readings in the journals of the Institute of Electrical Electronic Engineers, one of the hallmarks of a successful presentation of this nature is how many times you mention the words infrastructure, paradigm and competitiveness. So one of the things you would have to do is keep a count of how many times I say those things, there will be a quiz afterwards.

I see thus far here a focus on patron access, on what it is that patrons have in their hands to access the library material, and it is my contention that -- by the way I saw every paper here except ours and I don't know if they are trying to send us a message or what. But it is a proposal and it is a matter for discussion and I actually fully intend to say things that are perhaps on the border are outrageous and provocative and that is to get some interest and to inspire some feedback.

But focusing on patron access I think inverts the entire development process, it inverts the entire research progress, and by that I mean that is the very last thing one would want to do in a transition process, that is the most high risk thing that is absolutely the last place you want to visit.

The first place you want to visit is, if you will, the initiation of a paradigm, the beginning of the infrastructure to support such a change at the very end of the development process, and the way we do this is we model, Judy and I have modelled and we have used, if you will a stream metaphor, a flow of water metaphor, and I now add another twist to that just so it will be a little different from what is in print here.

Where we modelled the production process of library products, the process starts with the selection of material, and let me just tell you a little bit about the metaphor. The meaning of the metaphor of the stream is that it starts at a very narrow gentle source and expands as it recedes from you off into the horizon, and what we intend to represent thus, is narrowness might represent the number of people encountered at that point.

At the beginning we are talking represents selection of material, the recording, the digitization, and then further downstream would be the reproduction of material; further downstream would be distribution; further downstream even at the maximum width of the metaphor would be patron interfacing or where the user actually engages in circulation at the library level.

That is the kind of a last step in the production process or the enjoyment of the material, and I am suggesting that in transitioning from our current analogue methods to digital methods that we follow that stream and in so doing we minimize the risk involved by starting at the very beginning where there is a small investment in mastering a small investment in the number of persons encountered, which would be the people in our production process, and we gradually move downstream as the stream gets wider.

There is another aspect to the metaphor, and that is you can't see under water, so what that means is this is very much a simplification, it is just a manner of thinking, but under the water there is a great deal of complexity, and that is one of the issues I think that we want to deal with here. And I would like to introduce the notion of perhaps a dam or injection of dye into the water. It would be food colouring for those of you who are environmentally conscious, it wouldn't harm anything. And the meaning of this would be that we slowly convert from our current analogue methods, which is the clear water that we are in now and the downstream would be the green water, we will inject dye into the water and downstream would be green water which is the current method.

Above would be some other colour or whatever and we will slowly move our digital technology from upstream to downstream and you can tell which is which by looking at the colour of the water. But the general concept is that we move from low risk to high risk, and one of the things we achieve in so doing is we build the expertise, the infrastructure, the knowledge that we need to make that kind of final last leap where we have maximum risk and maximum cost.

By the way if anyone has any questions or comments or anything they would like to interject, please feel free to do so.

What we are attempting to do is to manage two major risk that you might associate with the use of technology that might become obsolete, and by obsolete we mean it is no longer a widely used consumer product, and of course we gain a considerable economy of scale by using widely used consumer products. And although I use the word risk and obsolete I don't mean to sound negative, but these terms help build a frame work, a conceptual frame work and they also suggest that the system that we have right now is a satisfactory one. They don't imply negative thinking, and we do have a continuous improvement program, each risk implies opportunity.

Now, the risks that I am talking about are logistic, meaning cost may escalate out of control and components may become unobtainable at any price if you are weathered to a obsolete technology.

Then the other risk, as I see it is expectations as patrons and sponsors become exposed to advanced products it may engender demands for similar performance from our products, and they may be reluctant to use what may be considered obsolete methods; and by sponsors I would include everyone, our founders, the people who manage the production process, librarians and studio staff, another part of the contracting network.

I might mention right off hand that one of the specific activities that we are considering engaging in is DAT original mastering. One of the motivations behind that is to remain in the mainstream of audio technology if the commercial production environment, and we are only a very small piece of the commercial production environment, so if that environment moves to digital and we are still using a different technology then there is the risk of increased cost and production inconvenience or production inefficiency.

So in the interest of managing these two risks we have established what we call a technology assessment and research program team to evaluate all the forces for change and to forecast developments in consumer technology. What this group does is it suggests focus of research resources and methods that are consistent with our predictions and forecasts.

The program is an open one, it is consultative, it is participatory, and we actively seek contributions from our consumer groups and from our staff and from international agencies. Right now we don't invite any vendors because of some of the complexities that that might introduce to the system.

As you may have surmised when I was questioning Stephen is that I would also like to develop an economic model that would help us project where our costs are going and maybe where alternative costs are going. That would be something that would have to be done. You could validly question whether I have the expertise to do that and I would certainly agree with you, but at least I have an interest in it and intend to move it forward.

The central forecast at this point from this group is that digital methods will dominate future communications and entertainment at the commercial level and I think that is pretty much the consensus of just about everyone here.

So in view of this we are changing in fact, there is a change. We are making, I think, a creative and decisive decision to move towards digital methods and we are going to use this production stream metaphor. Again with the addition of the food colouring analogy injected it would be a dual system, we will have both digital and analogue methods throughout the transition process all the way until the very final step when the consumer gets some new access method which parenthetically could be a medium or electronic or whatever is the most cost effective.

We do have some very specific implementation of this kind of conceptual and theoretical approach. I am not sure that we want to pursue that right now. Why don't I just name them so that we could be thinking about it between now and our more technical discussions this afternoon, so that we have some prior thought.

Some of the things that we are experimenting with is digital original mastering, and also prior to the meeting we distributed a paper called Digital Collection Access System which is another proposal which we begin to face up to some of the technical issues, the very complex ones such as coding different types of audio, representations of audio material; and we were conducting some experiments there, and I can describe those too.

There is another area that we are engaged in exploring on an experimental level, which is the question of variable rate playback and how one achieves that and how one test it. Several of these experiments, one of the nice things that we get to do is to involve patrons and involve users, because we structure the test so that they can be participants. This is very important I think.

People who work in the laboratory tend to be sometimes disconnected with the final user, and so we use this as a mechanism to keep ourselves on track and it is an excellent way to give people a certain stake or a certain ownership in the final product. And I think that is something I would like to engendered and build on here.

What I would like to do is to emphasise, and I will tell you this afternoon a little bit about some of these projects and maybe it will stimulate your interest a little bit more, but I would like to emphasize that this is an open and consultative process and what I think, maybe one of the substantive outcomes of this gathering might be the establishment of a mechanism to maintain communication on a very technical and very informal level. I think that is something that would be very beneficial for us to establish and I think we can do it before this meeting is over and that may be our major achievement.

In my brief encounter with my colleagues and RNIB and Australia and New Zealand I recognize some real technical talent there and we are all focused on the same ultimate goal and I think that a collaborative effort or the harnessing of that talent as well as ours is something that we ought to work towards and we ought to build on.

When I perhaps outline to you some of our laboratory experiments it may occur to you how you might become part of that.

Have I said enough, Judy, or is there more. Judy co-authored this paper with me and she may have some additional comments. Or maybe if someone has some questions.

JUDITH DIXON: Let's see if somebody has some questions.

KURT CYLKE: Are there any comments?

JOHN COOKSON: I have to tell you about an image that I saw; occasionally you see a picture that kind of tells it all and you don't even have to read the caption, let me describe it to you. It was from the Scientific American and it was a picture of an obsolete digital media, it was a big disk pack and some kind of a paper tape kind of strewn around and some of those big old floppy disks and two or three other different kind of disks and so on and right in the middle of all this kind of digital flotsam was the Rosetta stone, and I think the message is fairly clear, namely how ephemeral some of these media are. And I think that one of the points that Judy and I made is that when you design a system or a development process you need to take that into account.

Basically what you say, without worrying about the cost is when the medium you have becomes obsolete and too expensive you move on to the next one or whatever is most popular and you have to think in those term rather than in a kind of a fixed format.

JUDY DIXON: I think one of the fears that is often in people's minds as they discuss the transition to another audio format is if we pick the wrong one. What if we pick a format that will go by the way of CDs, as we are being told CDs will go by the way of, which disappoints me greatly since I have three or four hundred of them in my shelf at home. But I think that one of the points that we have tried to put forth in this paper is the idea that it is possible to start the transition process in a low risk way and try things out and involve users.

[illegible] is not so much in this paper I am involving users because as we were going through it and I kept saying, well what about the consumers, what about the consumers, we finally quickly realize that was another paper. So we set about and did that and you will hear about that tomorrow, that is why the part about expectations of consumer is in here somewhat, but it is minimal.

But I think what we are all worrying about is, you know, how will we know when it is time? What if we pick the wrong one? And yet the model that John is putting forward here, I think, makes that at least somewhat manageable and conceivable in our minds.

KURT CYLKE: Stephen?

STEPHEN KING: Two slightly related comments. One is based on the research that we have been doing, and let me qualify the word research by meaning talking to people involved in the industry, listening to views, reading what was going on. We have formed the view that the future involves technology which will continue to change in faster life cycles than we have traditionally been involved with, and therefore some of the technologies that may come and go may go in ten or twenty years as opposed to thirty and forty years cycles. And that presents us with some new challenges. And that is why I think we think of, I certainly think that we have to plan for a future which means that we will potentially at all times be dealing with multiple technologies for distribution. We may be dealing with two or three different ones at any time and we need to plan for that.

The second point, and thinking about the model that you are proposing, John, gives me some worries because I do think it is important we start the process thinking about the consumer and what it is that the consumer wants from a reading medium, because we need that information to then plan, at the front end of the process at the upstream end what it is we are trying to do, so if the patronage, the consumer, wants to be able to make notes, if they want to be able to reference down to the word level, it is a whole range of things that people want to be able to do, we need to know that so that we can then start to plan that into the upstream end of the technology. And it is not just the technology that is important, it is the methods of what one does in the recording situation.

So I agree that one has to start the process, the physical implementation from the upstream, but I do think it is important not to. You need to sort of go right to the bottom end of the stream and think about the patron first and what it is that is missing from the existing system and what the patrons want to do, and then go right back up to the beginning of the stream and plan the processes appropriately so that when we get to that final very high risk, very high cost investment we can actually then deliver what it is that the patron wants.

JOHN COOKSON: I thoroughly agree, I thoroughly agree. One of the strategies that we are going to use or we are suggesting is to kind of build a cadillac with everything on it and try and anticipate everything that a user could possible want from a software standpoint, from a production standpoint. What is in this product? Let us put everything in it. Think of anything that you can possibly put in it and let us provide for that on a software basis; and then the particular product may be tailored. It is conceivable that for a product that this person might have these features, that person might have that features.

So what you would want to do is take a very general, very global approach in the design process and even allow so called software books for stuff that you haven't even thought of as yet.

KENNETH JERNIGAN: It seems to me that what the patron wants is an interactive, not a fixed thing, and that it implies informed choice. Sometimes if you give the patron what he or she wants you necessarily take away something else simply because there aren't unlimited resources either in human power or money, so partly you have the responsibility of how you market and you have the responsibility of trying to plan ahead as to what the consequences will be of answering a given request, which is in no way to say that you shouldn't be concerned with what the patron wants but to say that it can't be simply I will find out what the person wants and then we will try to do that.

It has to be an interactive discussing process and it has to be a process where you deal with informed patrons and not simply a kind of either a selected group. Because you could get any response that you want if you select carefully.

KURT CYLKE: To add to those comments, Mr. Jernigan, I am going to reflect on our inventory of machines where we use basically the four track 15/16 and yet have three different machines for three entirely different user groups, all of them having the commonality of being blind.

You have the standard machine with the basic ability to fast forward, reverse and all of those things and the ability of play the two track as well as the four track one and seven eights, 15/16s, you know, the international interlibrary machine.

Then you have the easy machine, you push it in and you close the door and it works. Which has received one hundred percent acceptability from the client who it was directed to serve and nearly the same rejection by anybody who could use the standard machine, I mean the older less agile person. And then we have the combination machine which would add to the record player, with all the other capabilities of the workhorse machine and that as we see the hundred percent acceptance from the sophisticated professional in the workplace person and a total rejection from the group.

So you are talking about selecting or non selection, we are designing products for different pieces of the same user group ranging from extraordinarily sophisticated, the users of this room, to the -- Jaakko you say your average age is 70, ours is not that, it would be 65 or something, retired, just wishing recreational reading but ranging up to 102 to 103 years old. I think that is what John was trying to say. All the things are there but there could be possibilities of providing access through different ways for different parts of that.

KENNETH JERNIGAN: But you exemplified exactly what I am talking about. At what point do you involve the consumer in determining what it is he or she wants? You offer these different machines but the consumer wouldn't want them if the consumer didn't know that they existed, or the consumer might have wanted or might not have wanted something else but you obviously can't provide ten thousand different kinds, so you have to make some choices based on as much interaction as you can reasonably get, which I think you have done, and then, sure you move on down he line and you try to make modifications as you go. But I simply say that the notion of an informed consumer public has implications to it that have to be understood and part of it depends on how you select and there is still a responsibility on the part of the library to take the lead and to put those choices out there that can be had.

JUDITH DIXON: Right now based on hardware we have three different units, because they have to be physically designed they have to be physically produced and they have to be physically put forth to the consumer in separate way.

Whether we are talking about a digital medium, the medium itself and because of the very nature of it being able to be controlled by software will lend itself much better to having fifty, one hundred, three hundred different ways of doing things, I mean it is almost limited by the imagination.

In our paper tomorrow we will talk more about involving the consumer and what we are putting forth is a sneak preview, you all have copies you can read it, but what we are putting forth tomorrow is that it is possible to involve the consumer at the very very earliest stages and the conceptual stages because librarians don't necessarily know how a consumer is going to do things, what a consumer does with a book, wants to do with a book, even maybe a consumer doesn't know, but there is going to be a dialogue between people who can produce things and people who use things and hopefully the net result of that would be what they come up with will be more things than either of them had thought possible now.

DAVID BLYTH: But surely what you are saying there is that it is an evolutionary thing rather than a terminal thing. You know I am flying out tonight in a jumbo jet and I am quite sure that if the Wright Brothers had put the specification for jumbo jet down they would never have taken off, it has got to be evolutionary. What you have talked about with your three types of machines, you didn't start off with three machines you start off with one and then you built from there, and I can't see that that isn't going to be the concept that we will have to use in the future.

I mean I don't think we can tie ourselves for twenty years of one type of technology in this day and age, it has to be a revolutionary type of thing and it must be ongoing. And that is where I believe the users of the service will make the demands and the technicians will work with the users.

KURT CYLKE: Now not to your specific point or not to any points that have been raised, some of the thoughts that have come in my mind and they normally comes at nine o'clock at night when I am in bed and I try to put them out of my mind and go to sleep immediately, because what I am going to express is not necessarily what you want me to be thinking about, I mean those of you who work with us or with others.

I am wondering, with the expansion of interest in the audio book by the sighted population and the ability right now for example for people, and I wouldn't speak about all of you, but Judy on my left of having with her hundreds of CDs ROMs, having access to braille, audio, large print output, indexing capabilities, encyclopedias, dictionary, and if this goes on and on and on are the needs of the blind community really going to be met in a commercial world which would be ideal, and then what do we do? Well, we would still have a concern for popular reading. I mean I don't project the synthesized voice is pretty good, but you know in the near future we will still have a need for popular reading, perhaps, and maybe less sophisticated machines for the older people. Maybe we are in a whole entirely different ball game and we are buying commercially and designing for a subset of the blind community, I don't know.

MARY SCHNACKENBERG: I guess we are in a considerable danger of drifting into tomorrow morning's conversation. But to pick up on Kurt's point, one thing that troubles me is the concept of the consumer. I don't think we have got such a creature. There are individuals who happen to have a print disability, but their range and shape and size and colour and ethnicity and intellectual equipment, there is an enormous range. So what we have to try and do is design as broadly as possible.

I am troubled by the concept of designing for the older patron. I know people in their 70s, 80s, 90s and over 100 who can wipe the floor with me with their intellectual equipment. I understand that there are patrons who have technological challenges, but that is a different thing. So what I would hope what we would think about designing is a concept that has in the bit stream all the bits and pieces that the range of patrons will want to access and then those access choices will be made by the matrons at whatever level he or she is working at at the time.

I don't want to put limits on people. People grow and change as experience teaches them. We are older, none of us are what we were even a year ago. So I hope that the kinds of design concepts that we build do not limit people but will enable the growing of horizons.

SUSANNE SEIDELIN: I want to comment on that, because the Danish National Library for the Blind we have made a survey of what the users want from us and it says clearly that they want individual services and is build for everything. Built for what we actually are going to produce for them but also in other needs. So I think it is very important that we don't invent this consumer person as being one person, so I very much agree with you.

KURT CYLKE: I certainly agree with you also, I don't think there is anyone in the room who would think otherwise. When you get down to the practical point of view and you say, Mary Schnackenberg for example do you have a piece of hardware with all those capabilities and with a push of a button the consumer selects it, if that is what I heard you saying, and if you do, our experience has been that it threw sixty percent of our population into utter chaos and that they don't use the machine.

This is not a political statement or a politically correct statement, and I am probably going to be totally politically incorrect that sixty percent of the population cannot handle and that is when we for example design the easy machine. When confronted with the combination machine and the choices that are available there, anyone who is not a sophisticated professional working person who are in the academic committee just, you know, fell apart when they look at it.

I think what John is saying is or what John is going to say. Go ahead, John.

JOHN COOKSON: That is a very very complex topic, but I think we have a way of dealing with that. With softwares there is just no limit to the way you can manage complexity. You can present a very simply, on and off, no distinction to a consumer and within the same device you can get very very complication very sophisticated approach to reading.

One of the things we are doing is we are searching for models and we are going to model a wide variety of products with all those complexity in our library and get people to look at them and try them out. That is the only way that I know how to deal with that.

KENNETH JERNIGAN: I am just going to say that, Mr. Cylke said that nobody in the room would probably disagree with what had been said. I guess I do partly.

I think that we are in danger when we talk about there is no such thing as the consumer. In one sense that is true. But we are in danger of doing what the modern school has done when it has said each individual child will be taught individually, not as a group. If you put thirty or forty people into a classroom with a teacher and so nobody gets taught anything and they all say we will teach them individually, which means you taught nobody anything.

Now, I think that of course the concept that the consumer is an individual is a fine concept, but also for some manageability and some economy of scale you have to have certain kinds, classes, groups or whatever you want to call it of consumers and you have to have some accountability to identifiable groups of consumers, and if you don't you end up with accountability to nobody except self.

So, yes, I would come back and say I think there is such a thing as the consumer and I think you such break that the consumer down under certain identifiable classes, but you don't want too many of those, because if you do then you will end in not giving meaningful services to anybody. And I come back to NLS free machine, I think that is great, but would I want fifty kinds of machines? No, I wouldn't.

Well, there are fifty different attitudes about this and that out there and with respect to the combination machines for instance, I looked at it. I might have designed certain parts of it differently. As a matter of fact I told Mr. Cylke one part of it I didn't like. Well, he made some protest about that, and it develops that he was right. As I looked at it I do like that particular feature.

So sometimes we build a product, it isn't in response to a demand, we create the demand. We build the product and then we create the demand. If the product is really any good you can create the demand. I don't demand what I don't know, unless I know it exists. And I think we should not simplify what is really a complex process in one way and in another is simpler than you say.

JUDITH DIXON: Another aspect of all of this is that users of today who are finding cassette machines so baffling are the forty-year olds of forty years ago, and they had no experience with these kinds of things. Today's forty-year olds, I mean I expect to be using talking books when I am seventy or eighty and probably will be able to use a fairly complex machine even then, I hope. But also sighted forty-year olds today who will one day be blind are using ATMs and VCRs and all these other devices that are part of today's everyday life that we are not part of everyday life forty years ago. We are going to be dealing with a very different technologically oriented consumer thirty, forty years from now.

KENNETH JERNIGAN: Judy, one final thing.

Those forty-year olds of forty years ago probably have closer acquaintance with how to use today's technology than you and other people who are now at the forty-year range. By the time you get to be seventy, eighty people may not have anything like what is here now, and it would be so different that you can't imagine it.

JUDITH DIXON: That is true.

KENNETH JERNIGAN: Because the Arab who was asked what he thought technology would be for a thousand years later said, as I remember it, that there would be such finely developed breeds of horses that they will be able to do all kinds of things. So I think we should not congratulate ourselves that we are enough sophisticated that we are going to be able to use the technology of tomorrow. We will be babes in the woods on that.

JUDITH DIXON: I think that is a good point in that forty years from now they will probably give me something that I wouldn't have a clue how to use it, but hopefully I will be evolving with the technology.

STEPHEN KING: I am slightly concerned about the conversation which concentrates on machines or players, that is how people call them, and I just wonder whether one needs to take a step back. When we were talking about consumers, and I am not going to enter into the debate as to whether there is a consumer or groups of consumers, I don't think that worries me.

What we are trying to do, as far as I can see, is to allow print disabled people access to all the things that print able people can get access to, and therefore there is some model of what goes on in the bookshop, what goes on in the public print library, what goes on in the newspaper, the print publishing industry that sort of key task.

If we look at what, first of all, print able people are doing and reading and what we believe is going to come out of the publishing industry in the future what we should be then doing is considering designing a technology which provides access to all of that. And so it may be heretical to say, that actually talking to print disabled people now is maybe not the right place to start, but actually have a look at what print reading people are doing, because actually what we are trying to do is to provide access to all of that.

Now, that is where we have started from and which is why I use the example of a cookery book, a religious text and an encyclopedia, because at the moment the technologies that we have got available to us actually don't make those accessible to print disabled people and therefore it is those types of things.

So looking at what is going on now and what may come in the future in the next ten years, and then actually designing the upstream technology that how are we going to record something so that somebody can look up aardvark in the dictionary. We can provide the technology to do that but we actually have to ensure that all our recording has been done and to provide that on some future distribution technology.

KURT CYLKE: I would say I don't agree with that. When you say that the encyclopedia is not available today, it is available today. When you say the dictionary is not available today, it is available today. And it can be used by the visually or the blind visually impaired person who has access to the hardware that would make it available to them, but it is in the market place. What I am suggesting is perhaps we don't want to make all that available, that the commercial world would be making a good part of that available, and what we want to be making available is that which the commercial market doesn't make available. With that I am going to turn and give this to John from Australia.

JON ISAACS: Thanks very much, Kurt. Jon Isaacs from Australia. I want to come back to a point that John Cookson was making. I think it ties into the discussion we just had, because I don't want to preempt the discussion tomorrow. And that is John's plea for an open and consultative process, and it is a method of deciding who are the participants. The consumers in the process aren't simply the readers they are also the agencies which are represented by us, and there are significant input which we can give in terms of what is going to assist us in being able to meet the needs of the consumers.

I actually agree with Stephen's point earlier on, and that is that we need to be discussing now what are the issues that we need to address ten years down the track. What are the sorts of things that concern us with current technology which we don't want to make the same mistakes as we go down stream.

If I can just get into the debate very quickly about the consumers. I think the point that people are missing is it is true that consumers are going to be much more technologically literate, they are all using ATMs, they are in their fifties and sixties, they are all using computers at work, which means they will be understanding of those issues when they are seventy-five and eighty.

But the point I think you are missing is that the consumers will be old and the function of oldness is not whether or not they were smart or were able to use technology in their youth but what they are capable of doing now. My father-in-law, for example, who has been an expert user of the telephone for all his life is now not an expert user of the telephone.

In other words they have frailties, memory and all the rest of it, which we have to accommodate; and the number of consumers in that age bracket is of course growing, and it is to me an issue that we can't lose sight of. It is not that they understand new technology, they have and they will, but the medium of the current technology for them is a simple, robust and very easy to use, notwithstanding how competent or otherwise they might be in the use of technology.

KURT CYLKE: I think of that and age and I think of Mr. Jernigan's comment about designing a machine for somebody. I can remember, and I am sure most of you may have, that the automobile when you left the door open it said, please shut the door. Please turn off the lights. Take the key out of the key chain. Well, ten years ago I was looking at that and I was joking with a fellow who worked for us, I thought we gave him too much money he had one of those automobiles. I am about to go out and buy one. I have never stepped out of the car without turning off the lights. I mean I have to have somebody, my wife wouldn't be there all the time.

But at any rate, are there any other comments to John's paper? We have a few minutes before lunch.

KENNETH JERNIGAN: I want to make one more, Mr. Cylke.

KURT CYLKE: Certainly.

KENNETH JERNIGAN: And that is, I hope all of you are keeping in mind that anything you plan beyond ten to fifteen years at most is a waste because we are at a bridge period and by that time, if you believe my friend Ray Kerzweil, we will be at a place where you simply speak to your computer and it will do what you want and you don't have to bother about this. So you are in a bridge period you are not really planning for the long term future but on the short term future. How do you get across, that is all.

JOHN SIMPSON: I want to come back to a point that Kurt Cylke made, and that is the whole issue of what is being developed and the why of information technology in the broader community and the extent to which our services can use what is out there in the wider market place, and I agree with the comment that you made Kurt that there are tremendous opportunities there for information access to come through mainstream sources. But there is a proviso that I want to inject here and I don't want us to get into a whole new discussion area because it is a subject for full discussion, one that we need to look at the international level.

One of our concerns, certainly in Australia, and I am sure I speak for many other places, is the fact that so much of the technology super highway development is screen based, is visual in its interaction, and I think that the term print disabled would be out of date in five or ten years; we will be talking about screen disabled if we are not careful, because we need to, as blind people and as the organizations that is serving the needs of blind people, make sure that along with the developments that we are looking at here for meeting the specific needs with talent services.

We need to work at the international level and nationally to ensure that developments with interactive super highway technology and so forth are fully accessible from day one and we don't have this ongoing problem of having to cobbled together solutions after the event. And we really do have to work not only in our own country with government and with the electronic industry to that end.

JOHN COOKSON: Dr. Jernigan's observation regarding voice recognition is interesting and I think intriguing. In fact we have conducted some experiments in our lab and we propose a very rudimentary crude voice recognition dialogue. You would be surprise at some of the issues that emerge from that. One of them that occurs to me is what do you call this thing when you talk to it? "Hi, you." What occurred to me right off the bat is machine. "Machine, go fast." or "Machine, go slow." We demonstrated that.

What emerged from the meeting that we demonstrated this was that somebody suggested to call it "reader" rather than "machine". I mean we could discuss forever what the dialogue would be. Do you have to say "Shut up." Do you have to be polite? Is it polite to you? I mean it talks back to you, it says, I am going faster, what do you want from me? Or what? So no technology is taboo as far as our NLS Laboratory is concerned. It doesn't frighten us at all. I don't think voice recognition is quite ready for the big time as yet, but when it is ready we will have again one of the infrastructure to deal with it.

I do think there is a stable component to the service, I mean Aristotle, poetic or whatever, there are some stable components, and what we are doing is reformatting them, and I think what we need to do at this point is design a product a very general product and I hope we can begin to explore that this afternoon, in a manner that recognizes the persistence of it and even though it may be on one machine or one medium today, it has to be designed today so that it can be moved and it can be flexible and it can be available in the future.

KURT CYLKE: Anyone else.

EUCLID HERIE: Well, I would like to put in my two cents as well. I am thinking of David Blyth flying home and thinking of somehow how the airline industry got itself together to figure out how you would direct the traffic so that everybody could get to where they were going. I am not suggesting that out of this kind of a meeting there is going to come anything like the international authority on air traffic control. Having said that when you are in the airplane you are happy there is.

I think that as a blind person, as I hear in the first part of our discussion, we are going to have a range of solutions and a range of options and products, and I can understand all of that, there will be the concepts designed in the lab and there will be the concepts designed by blind people and others by commercial people, and not in a negative way, even by librarians, and everybody is going to have a whole different approach to it.

I think, for example, those of you who may not know our North America Region World Blind Union adopted through a working group a couple of statements, one on braille and then we adopted one on the books that are on computer disks the artificial sort of intelligence, E-Text or whatever it is called now. It may be called different things in different parts of the world. In North America we have several approaches with different technology to try to accomplish the transmittal of books to computers and getting this information electronically and where we are risking setting up technology. They will be incompatible, they may be inefficient and may not be cost effective. I guess as Microsoft decided that they are going to impose a language on an operating system then maybe the world is going to have to learn to accept. Maybe nobody ever thought that that could ever happen.

I don't know enough to know the differences between DOS and Microsoft, but it seems every article I read it says that if I am finally going to be computer literate I may as well forget about DOS, so I am glad I waited, and I am going to go to something that John says would disadvantage me as a print handicap person.

They talked about the information super

highway, and the comment I talked about there is that blind people risk being road killed on the information super highway. I guest we don't want to be road killed on what the next generations of talking books are going to be, in whatever form they are. Recognizing that what we as agencies, because what some organizations that are here now your budgets and your operations are tied to mandates of legislation and funding related to that, and we know that with money goes influence.

The picture in Canada and it may be in Australia, and it may be in New Zealand is far different in the sense, and maybe England, that we are privately funded and, therefore have a different kind of a challenge and certainly less money to do things.

What is happening now, if you look at newspaper for the blind, for example, as you will see in our information resource centre here tomorrow, there is a technology that has evolved there that we at CNIB have something to do with, but fundamentally is being driven by what blind people have said, we say we need in accessing the daily newspaper.

Dr. Jernigan's organization has yet another model that seems to have even greater flexibility and accessibility than what we have here in Canada, that truly is not that easily accessed unless you have a computer and a $700 mechanism and is not totally user friendly.

I use that as an example. What Ray Kerzweil said in terms of the artificial reading machine that I know university professors and lawyers who are blind who probably make relatively little use of the traditional talking book service that we would provide because they are just learning to work in a world of artificial intelligence and artificial reading, and that is happening, has happened as we speak. And so as we talk about how long it is going to take, and I think Stephen mentioned, if it takes the RNIB a decade to make a decision I can assure you it would take the CNIB at least that too, we are going to be too late because frankly other things are going to happen. That is my personal view.

I am urging our organization, I have been a voice in the wilderness in our country trying to get people to understand that the decisions that are going to be made commercially or otherwise, and somebody has talked about TV and all these things, they are very very real and happening extremely quickly. And so as we decide what would be useful, and I think there will be a market for what Jon Isaacs talked about, the aging, multi-handicapped, blind person.

Yes there will always need to be someone to provide that but the generations of people, and I guess I am not one of at this point, are going to insist that other things come along that are going to happen much more quickly and that even commercially will become far better.

Blind agencies in the world didn't develop the Talking Watch. It was probably someone in the Pacific rim who found out that you could produce one for about $8, and so those people who want a talking watch could get one now. Yet I still prefer a braille watch, you know I am of another generation. I guess what I am trying to say is that time will move far more quickly than we might realize and we are going to have to respond to that.

A throw away statistic, but one that I think will apply because some of us were in Japan at a conference on blindness and aging three or four years ago and there were twenty-five papers given there, and here at CNIB because we have a single entry point in Canada, although we are not the only organization, but we are, insofar as rehabilitation and most services go is last year we have the highest level of new referrals. We had nine thousand new clients that came to us for service. Of that number something like, I think, six thousand, were over the age of seventy. And that says a lot of what Rosemary is going to be planning for her library in the future because they are going to be feeble and multi-handicapped in cases. Yes, they may be computer literate, but anyway they are going to require simple easy machines that won't confuse them. Anybody who has got an aging parent or friends and you try to get them to use the TV converter, good luck because it ain't that simple.

So anyway that is my two cents. I wasn't trying to get us to lunch time but it is almost lunch time.

KURT CYLKE: Let me just make one comment. The awkward thing for me sitting here is the person that you described of the six thousand out of the new nine thousand people that you got is what we are working with. And when I said I wasn't politically correct, I live as a schizo in life because half of my life is talking about young people, students, professionals, members of organized blind organizations and so forth, but really at the back of my head sixty percent of our clients are the people that you have just described and they exist today. I mean they are the great bulk of the users and the great bulk of the borrowers of the books are those people.

DAVID BLYTH: They are not all in that category of being multi-handicapped.

KURT CYLKE: No, no, I am saying older.

DAVID BLYTH: Yes old, but some of them are still very much alert and quite capable of using sophisticated equipment. Some of them are not old.

EUCLID HERIE: In our case, though, the majority of people are very elderly.

KURT CYLKE: You know, if I use figures, for example, which would probably, what is the percentage, Mr. Jernigan, of the welfare level of the blind community in the United States? It is a very high percentage.

KENNETH JERNIGAN: Well, obviously the figures we use are that 70 percent of the blind are unemployed even in their employable years, and that has something to do with many things. Of course more and more of the people are getting older and it is way way over half of the blind population are obviously past sixty and climbing.

But you know, Mr. Cylke, one thing more has to be taken into the fact as a political reality and that is if you have sixty percent of the people are elderly and frail it follows that if that is so that that sixty percent will not be the most vocal, the most demanding, and you will have to meet the needs of the demanding.

KURT CYLKE: Absolutely. But let me just throw one more statistics in the sighted world, and this one is a shock to me. The figure in the United States used to be that thirty percent of the American population was functionally illiterate, that is unable to read a bus sign, a soup can or figure out anything, the sighted population. That figure has been revised to forty percent. So forty percent of the sighted population cannot read, unable to function in a reading environment. Now, those are also the guys who are going to be getting older and so forth, and so if you want to start talking those statistics your blind of the older age is going to have a different characteristics I think.

ROSEMARY KAVANAGH: I was going to say that in the end you are providing for a whole community, sixty, forty, you are still providing for a whole community.

KURT CYLKE: With that Euclid I believe lunch is ready.

---LUNCH RECESS: (12:00)
---UPON RESUMING: (1:30)

KURT CYLKE: We are ready to start. This

afternoon at 1:30, Ms. Hirschfeldt who is on my right will be talking about the Daisy Digital Talking Book System and we will go on through for the next hour or so on that. Following that John Cookson will come in again with some comments about the future and hopefully we can have some broad participation.

It has been pointed out to me that there are two seats at the table, if anyone is in an uncomfortable position and wishes to come to the table, please feel free. Next to John here there are two seats.

With that and no further introduction, Ms. Hirschfeldt.

INGAR BECKMAN HIRSCHFELDT: Thank you. I would like to say that I am very glad to be here and to present my two boys and one girl. I will not talk about Daisy, but I want to introduce her and I hope that we in the following discussion can share experiences in the development of a new system and we are very interested in hearing your opinions, also see if this discussion can lead to something more substantial.

First the girl Daisy, that Kurt thought it was a girl but it isn't.

LARS SONNEBO: Shall we tell them the truth?

INGAR BECKMAN HIRSCHFELDT: Yes.

LARS SONNEBO: It is not as cultural, I am afraid, but it has some connections to at least the book. I think it was Arthur C. Clark who wrote the novel 2001 the Space Odyssey, it is one of my favourites at least. It came on as a movie in 1968 I believe.

In that particular film 2001 was a very powerful computer named Al 9000, that computer could talk, it had a marvellous synthesized voice and it was very intelligent that computer, too intelligent I am afraid so in the end of the film, for those who haven't seen it, one of the human beings had to kill the computer by removing its memory capsules one after one. The poor computer regressed and went back to its childhood and the last thing it did in life was to sing a song, the last song that it had learned from its maker and that song happened to be the famous old melody, "Daisy, Daisy, give me your arms to do your work." And since then, at least for people who I know and in the computer field of computer fans and all that, that song and hence that name has been connected to computers that can talk.

When the idea of this system more or less struck me some two years ago I tried to think of an handy acronym because that is always good to have, and all of a sudden it struck me that a digital audio base information system, I mean it came like that and that name was Daisy. So since that name is heavily connected to talking and in this case singing computers with human voices and since it actually means something relatively meaningful I think it is a good name; don't you think?

SUSANNE SEIDELIN: I thought it was in honour of the Danish Queen. Her name is actually Daisy.

LARS SONNEBO: Well, you never know.

INGAR BECKMAN HIRSCHFELDT: Well, it is a daisy for every one, and that is our purpose for this presentation. I will take you to Kjell Hansson, who is the responsible man for this situation.

KJELL HANSSON: I will just give the background, and in a large way tell you some details about the technical issues, and if everything goes right we can listen to part of the book in the Daisy format later on.

The Library TPB has the responsibility for essential service for university students in Sweden, and at the moment we are giving digital service to 118 students. The students are either visually impaired, or students with dyslexia, they are studying around different universities in Sweden.

Having worked with students and digital services for fifteen years you get very aware of the big problems studying with analogue tapes. There is one big problem of finding different parts in a book. You have to deal with a lot of cassettes when you have perhaps twenty titles. So we started looking at the digital system and the Daisy system is for the moment running on hard disk and CD ROM.

It is quite natural for us to work with the personal computer as a platform for our Talking Book System, as our students are right now and in the future using the computer for a lot of work in their studies. For instance they are using word processing and they are using the E-Text books that we are producing and lending out to students; they are using commercial CD ROMs as encyclopedias and they are also using the Swedish book of law. They are now and more and more in the future using computerized newspaper systems and magazine systems to read newspapers and magazines.

What we were looking for was a system that could handle twenty-five to thirty hours of speech on each media and which would give the student direct access to the whole book from the table of contents. We also wanted our students to have the possibility to skim read, make underlining and make notes in the book.

During 1995 the last year of the three-year project, we are developing the tape transfer system in order to be able to transfer our old analogue books to the new digital system. We are also developing the recording system and making the final changes in the playback system. As Ingar said before we are testing the system this autumn on ten to twelve students in Sweden.

And now I will take you back to Lars for some technical details.

LARS SONNEBO: Purely technical. With all respect to all of you here who are deeply concerned with economical matters, planning purposes and even politics, I would like to take on a somewhat different perspective and try to take on the role as the somewhat silly technician and the happy technician.

When we mentioned digital technology today it does seem like it is something horrible that was forced upon us that we have to adapt to and we have to live with and all of that; and of course that is true from certain perspective, but from others I think, and now I am beginning to get personal, I think that digital technology could be made wonderful, and of course you agree with this. But I am just mentioning this as another perspective.

I think it can be wonderful because you can do a lot of things that you had not been able to do before, especially for TPB typical user group, client group, university students with potential high demand for the excess, you can do a lot of clever things but also wonderful things that you haven't been able to do with the technology so far. So from this perspective I view the development as truly positive.

I would also like to mention and this may be obvious to all of you, but I would like to point out that just by digitizing audio in this case you don't gain much, the only thing that you gain is that you follow the route that modern technology has taken because there are less and less fewer and fewer analogue devices on which to store sound and music. But just digitizing is just a way of partly by storing things.

I would like to stress the importance of software control, or should I say microprocessor control on the treatment of audio in this case. If we take that into the perspective we can make and do very clever things with audio; and that applies to Daisy, I think, even though it might sound a bit like boasting. We realized at an early stage that we needed a device which could actually handle amounts of data intelligently that is computer based or based on a program algorithm, a programmable thing, and we needed to treat data in such a way, we needed to rethink the concept of digital audio, and so we will soon show, and I hope that it will transpire that Daisy is in part another view on audio.

So far we have been viewing audio as streams of audio. Of course a Talking Book recorded on a take is a long tape, if we unwind it from the cassette it is a very long tape with sequential ordered material. But going digital or by introducing the microprocessor in this and the digital storage and excess you don't necessarily need to keep that, that perspective has been forced upon us because of the technology as I see it.

In essence Daisy goes beyond this by actually looking at the reality of percentage by printed book, that is the original material we have to make available. And we all agree that a student, at least, needs much higher performance and better access to the material than the situation is today with several cassettes and having to rewind them and wind tapes and find a position and all that. So we have the technology to do a lot of clever things so how could we implement those?

In our system it has been done by actually analyzing what is going on in the real world? What is a book anyway in printed form? We try to model the data structure upon that reality. The beautiful thing in computer programming, I think, is that when you find a model for the data that actually corresponds to the real world it works. I am not saying it works wonderfully or anything, but I mean it works.

Our model is that a talking book recording is not necessarily a stream of audio data but it is a narrator reading out information from a book and that the information is structured, of course it is, and to the least extent it is divided into some division units like chapters, most material is, and it has pages and the text itself has a logical structure of sentences and stuff like that. It is especially evident in material like typical student literature, of course, where you have a lot of this. But any material is structured because you can't read it otherwise, you need some kind of a division of the material.

Daisy follows that by dividing the narrator's voice up into discrete blocks or objects and information which you can manage on the computer control. And you gain a lot by that because you gain the possibility we wanted to have, the feature that the user could actually navigate through a Digital Talking Book or a Talking Book in this case, navigate and find the pieces of interest in much the same way as a sighted user navigates a printed book by flipping pages, by finding chapters, sub heading, by skim reading paragraphs and stuff like that.

We wanted to make that feature available to the talking book readers with this system to give them the same or similar kind of access to the talking book as a normal user has to a printed book, and we also wanted to compensate some of the limitations inherent in having a narrator speaking, that is lack of speed, and that is a very important thing for many of the users who are in a hurry like most blind students in Sweden, at least, seems to be. Of course you shouldn't be forced to sit to listen to silence and sit and wait to find your position, so I think that to have a responsive system is a very important aspect.

All right, should I demonstrate now, or do any one of you have any comments? Okay, so before I get into a practical brief demonstration, we can have longer ones later on, I would just mention the basic concepts of this system.

On the lowest level, the narrator's voice reading out from the book is divided up in chunks, as I said, objects of data blocks. We call them phrases. Phrases identified here by a period of silence that the narrator makes to identify, for example, a period or a blank line in the original material. Then we have the manageable unit, a very convenient unit which is to be compared to a field in a data base if you want. These phrases can be grouped together in logical groups corresponding to the printed material, for example phrase groups, pages and further on into sections.

A section in this case of Daisy is only a collection of phrases corresponding to some kind of division units in a book, it might well be a heading, a chapter or a sub-chapter or a section with a heading. It is completely up to the one producing the talking book, but it is very good for the user if the structure of the talking book closely or precisely follows the original material because then you gain the possibility to correspond with the sighted world, flipping pages and going from paragraph to paragraph as they do.

So we have, from the top level now, the book consist of several sections; each section consists of phrases or a collection of phrases but these ones can be grouped together in logical units corresponding to the printed book, that is pages, groups of paragraphs, groups of phrases I should say.

Okay, now we have quite an interesting collection of objects here corresponding to the narrator reading out the book and we have a computer and the possibility to gain access to one of these object in a structured manner. It is a very natural task for a computer system. What we have gained is that we have modelled the system upon reality here. We haven't said anything so far about how we should store this. It is not that important.

The most important thing is that we decide upon a way in which we can divide and treat this kind of an electrical publication, that is a talking book. It can be stored in any way that is convenient on a computer. I will just demonstrate the concept of phrases and sections before I go on.

So on this computer that we have here, I have stored on the hard disk in this case I think it is six hours on the book, which in my taste is fairly boring. It is about Physical Examination of the Spine and Extremities by Stanley Hoppenfeldt, and it is a reference material for physiotherapists or whatever. It is a highly structured book because it shows our point. It consists of, I think four levels in the book's table of contents and that is the interesting thing.

The Daisy system uses the table of contents of the book as its primary index because that is natural as found in the printed book. If the book hasn't got a table of contents it would have to be given one, but normally it has.

I have spoken of this phrase concept already and I have also said that the material is divided into sections. Now, each section has one or two phrases which actually corresponds to the heading of that section, and it is very easy to build a system that can allow you to navigate through the table of contents and hear every section heading being announced by the voice.

DEMONSTRATION OF DAISY COMPUTER SYSTEM:

LARS SONNEBO: All right everyone heard that? So we can move up and down. If we compare that with the taped version of this book we are navigation through what would be five cassette tapes, we are navigating in the logical way by jumping from chapter to chapter quite freely. In this case I have been moving between main chapters, opening them into subchapters and just taking out the headings of each chapter. Of course I can start the reading from any position here.

All right, I can also move phrase by phrase to skim read pass this introduction. I hope you get the basic idea before I get too heavily engaged into this. Anyone is welcome to check the system out in practice. But I wanted to show that we are always, so to speak, in the book's table of contents and we can choose our point in playback and we can just start and stop playback at any position. We can skim read through the material in one way or the other. In this case I have just demonstrated the phrase by phrase moving.

I think we will leave the practical demonstration. All right, how are we in terms of time? Am I making this too long? If you want to hear more or should I take that in an open discussion format.

I will just say this that this kind of open structure, and we have demonstrated quite a structured access down to a very low level now, and you might say that you are not interested because your users are not reading that complex a material, but I might say that it is good to have and it is there to be used if you want.

If we take the analogy of a word processor storage format, you may be interested in using the bold face facility or all those wonderful facilities or you might be using it for just typing plain text, it is up to you. And it is the same here, the system is there to provide the user with the excess if he wants. There are quite a number of materials where this kind of excess is of interest.

We have been mentioning religious literature, cooking and all that, imagine instead of this examination of the spine we could have had different recipes and chocolate cakes under each heading and we can just jump through the recipe one ingredient after each other in one phrase and divide it as phrases.

So that structure we think is quite general and can apply to everything.

Now I showed you the system where the data was on a hard disk and that is for pure convenience because we couldn't bring our CD ROM player, but this data is just binary computer data stored in file and I think that is the safest format you can get. I mean there have been fears here that if we choose the wrong format. Well, I say to that if we go for binary documented and open file format that can be implemented on any operating system that we know of today we are quite safe. I hope so.

So it is only a collection of files, we can store them on a CD ROM which is handy, it gives us at a current level of audio compression thirty-ish hours on the CD ROM, but it can be distributed and stored in any way. The most important thing is that we keep the masters in a format that can be easily transferred in the future. So at the recording stage we can have this data backed up and stored as any collection of computer files and as soon as there is another media available or as soon as one particular storage media is going out of the market we could just copy the data from one media to the other.

Just to say some words about the playback platform Kjell mentioned how natural the personal computer could be for a student to use even for reading talking books, and I think the selection of the playback platform is quite critical. This market, as we pointed out to each other is evolving rapidly and it might not be very wise to decide upon a certain media or a certain playback device as yet because we could easily get trapped into a certain system. It is very hard to go out and find a practical playback device that could suit anyone in the shop, apart from maybe the computer.

TPB's project is based around the personal computer, the multimedia capable personal computer as the platform and it uses standard technology in that sense. As a PC with sound board and stuff is standard big market things. And also the storage media which is again not fixed, but CD ROM is perceived as a good selection for now and for some years to come since the retrieval devices for CD ROMs are quite cheap and all of that.

So in the Daisy system the only thing that is in the system is programming, it is only software, everything else is standard mainstream hardware really. And if there is anything in Daisy apart from that is the logical format and that format is or will be available to anyone who is interested in making their own implementation or whatever because it is going to be published. It is a suggestion for a format which can be handled to store digital audio material intended for talking book purposes. And it is the format that TPB is going to start to use, at least.

Right now I have definitely said too much and it is time for Kjell or Ingar.

KJELL HANSSON: Are there any questions?

JON ISAACS: My question is about playing the material fast, you were talking about skim reading, can you play it quickly without affecting the pitch of the voice?

LARS SONNEBO: Yes, there are several aspect in that question there. One reason for having increased speed on the tape recorder is to quickly find your location in terms of slow playback position. I showed you that you can find a heading on the table of contents very quickly, that is one thing, and then jumping from place to place might be another thing, but you are asking about the facility to play back the audio itself faster?

JON ISAACS: Yes.

LARS SONNEBO: We have several features, ad the system in its complete form will definitely have more, but since we are treating the data as blocks of information called phrases, in fact it is not entirely true because we are going further down to something we call voice segments. the segments in this case is some kind of utterance, but there might be some short periods of silence in them, in between those segments, and we also have periods of silence between each phrase. Since the system is fully aware of the length of that silence we have measured it, we have stored it, not as amounts of data but as tokens, as counters of the length of the silence. We could easily reduce that during playback and we can demonstrate that which is fairly effective later on, where we can reduce all the silence that is made by the narrator, and it goes quick quick without even affecting the voice.

Then the last stage is to either raise the pitch of the voice, which is not appropriate at all times but you can increase it slightly and the last resort is to remove wave forms and periods of the sound to make it actually go twice as fast as the narrator spoke. So with all these technologies combined I can imagine that the use would have some kind of an acceleration key or something which can be used to read at least twice the narrator's speed of speech.

JON ISAACS: Do you have that developed at this time?

LARS SONNEBO: Yes. We have the compression of what we call inter-segment and inter-phrase pauses, that is in the system and can be demonstrated and the pitch raised. The actual removing of data, what we call time compression is not implemented in this version but we have a test thing implemented and it sounds all right. I mean it is not wonderful because removing information from a human voice results in less quality, of course, of the voice. But we have that technology available and I can easily implement it.

LYNN LEITH: Lynn Leith over here from Canada. I have a question. How do you interface the micro processing with the narrated voice?

LARS SONNEBO: That is done in the recording process and in the recording system. To be able to create this kind of specialize format we need a specialized recording process, of course, and it is taken care of by software. At the moment we have a software which is actually a recording system for the narrator and a so called tape transfer system in the same software. The only difference is between those situations is that when we transfer material from an analogue tape the material is not present and cannot react intelligently in any way. So the system has to take care of that to be more automatic.

In the recording process with the narrator sitting there we could make use of his or her capabilities, but the main intention is to have an automatic process as far as possible, so the only thing needed is that the narrator should actually be aware that he or she makes those pauses long enough for them to be registered.

LYNN LEITH: So the system identifies the pauses and divides them into the segments or the phrases so it is done automatically by the software at the pauses?

LARS SONNEBO: Sure. And I think that is a very important aspect because the automatic side of this is very important otherwise you couldn't be bothered sitting there pushing a switch for each sentence or whatever you like.

LYNN LEITH: That is what I was wondering about.

LARS SONNEBO: Sure. And on the other hand the narrator may need to be informed of how the process goes so the system can be easily display on screen and it does account for the phrases and actually confirms that a phrase has been registered, so to speak.

LYNN LEITH: What is the compression being used? The compression rate.

LARS SONNEBO: We are using data compression to store the data efficiently. One kind of compression is this phrase and segment based recording because we are not registering silence as sequences of zeros or anything and that is the kind of compression. Actually I think a normal talking book recording, at least of a fact material, can contain something like twenty-five percent of silence. Imagine when you enter a thirty hour recording into your system imagine you would have to listen to seven and a half hours of silence. That is a waste of time, isn't it? So that is one compression, but the data needs to be compressed further.

Currently we are using the ADPCM technology as defined in DVI, it is digital video interleave, anyway it is a standard four bit ADPCM. The reason we use this is because it is straightforward and simple. We have been able to implement that in pure software in the recording computer so we don't need any clever hardware, and we believe that currently the situation is somewhat unsorted on the compression front.

However the openness of the system is quite great as I see it and we need to be able to adopt to new technologies in the future and thus all the phrases, each single phrase in those sections is marked up with a format specification a format tag for the digital audio format, so you can actually switch and have several formats in each section, but it is there to provide for the identification of the digital audio format, so for example you can use MPEG or whatever audio compression that would turn up in the future.

But currently we are using four bit ADPCM which gives an acceptable quality and roughly thirty hours of recorded speech on a CD ROM, and I am saying acceptable quality in terms of sonic quality, acceptable compared to the analogue masters that we are actually transferring now.

LYNN LEITH: So that would be like FM radio or AM radio?

LARS SONNEBO: It is probably AM radio. We are currently using 16 kHz sampling rate which gives seven and a half kHz frequency response for the audio and it is considered enough for voice representation of sufficient quality. Then you have some digital distortion, all those side affects caused by this kind of processing, but the end result is to -- the most uses we have come across so far is highly acceptable. And you have also to bear in mind a way into the perspective that we are giving them a completely new kind of access which hopefully can, at least for the present, compensate for a lack of sonic quality while we wait for better compression technology in the future, which will surely come soon.

LYNN LEITH: Thank you.

CLIVE LANSINK: Clive Lansink from New Zealand. The question of sort of as it were identifying as you are recording the specific chapter or whatever, while I can understand how that can be done sort of on a sentence by sentence basis by just pausing, I wonder how you can do it when it comes to just randomly wanting to go to a particular chapter or something like that, which means that at some point as you are narrating and you get to chapter fifteen, presumably something has to be stored at that point which says this is chapter fifteen.

LARS SONNEBO: Absolutely true.

CLIVE LANSINK: So there is something that has to occur at that point, so can you just explain a little bit further? While I can understand how there would be an automated process for sentences and perhaps paragraphs, perhaps you can explain, for instance page turns and that sort of thing, where you want to encode that as you go?

LARS SONNEBO: Right. There is no magic about it. I can't be identified. Pages and paragraph groups can't be identified precisely by an automatic process unless you are sure that the narrator is making long enough pauses to identify things. But we have two situations here, we have the narrator sitting in front of the recording system and making the recording and in that case we can look at the recording process by using the analogy of the word processor in outline view mode, in that outline view mode you write the heading first and then you expand and write the text under each heading.

In the outline view mode you can also indent, outdent, rearrange and reorganize all your sections. The narrator using the digital recording system here is much in the same situation. You have a book file which we call it and in this book file you probably type in all the headings for the chapters as found in the original book's table of contents and then you simply select one of these headings and stop the recording under that heading, right, so that is how you do that process.

In the other situation where we have the tape transfer where the tape is running and the narrator is not there we have to use other methods. The ideal is, of course, to have automatic methods, and we have. At least TPB's material is tone indexed and the system is capable to identify tone signals, index tones automatically and use them as automatic commands for divisions.

So the current prototype system here is only capable of identifying a single index tone and to use that as a section divider. That was how the test material was recorded. I haven't at this time been sitting there for six hours, which is very nice for me, but it has been going quite automatic. The only thing I have been to change master tapes and feed them into the computer and the rest of it has been done automatically.

Then we come to paragraphs groups, or shall we say phrase groups and pages, these marks I am afraid, if they should be there, which is fully up to the producer they have to be entered by hand editing the material to once again skim read the material more or less and mark a check books or pressing a button or whatever in the recording software, or by the narrator pressing a switch during the recording. During a pause he or she can press a switch identifying the next pause to be on the next page so to speak or belong to the next paragraph group.

CLIVE LANSINK: Do you have any experience as to where the narrators can do that with accuracy sort of on the fly while they are actually recording?

LARS SONNEBO: Not as yet, only from talking to people. So we can't say anything now but we will probably be able to do so in the autumn when we have some test recording projects going. I mean it depends on the quality, the content quality you want from the material. If you want an exact correspondence between a sentence and a phrase the narrator has to take care and probably have to do some post editing to correct mistakes or to retake things. Because if you make just a slight pause you will have a phrase division unintentionally placed there, maybe. So they would have to be specially trained.

Whether they can accept it or not I don't know, but from TPB's perspective it is quite convenient because they order the books from commercial studios and they have to follow and obey their rules, so they are not interested, it has to work. But of course the system should help the recording studio and the narrators as much as possible.

STEPHEN KING: Stephen King from RNIB, you mentioned and I would like to inquire about the status of the software at the end of this project. You said it would be available to people to use and to adapt for their own use; could you just expand on that? Because I think in the literature you said the project would be commercialized.

LARS SONNEBO: Sure.

STEPHEN KING: What is the proposed status of this project when it comes to an end?

LARS SONNEBO: What I meant was that the format, the specifications for the digital format for Daisy will be officially published for anyone to make use of regardless of what happens, I mean that will be an output from this project. But as said in the material, the project will be commercialized which means that the company that is currently developing the stuff probably will be responsible for developing the software further, and those recording tools and playback software tools could probably then be purchased by anyone, but if people wanted to make their own implementations they can be fully free to do that. What is needed then is, of course, to make all the clever software that takes care of this data and presents it on any kind of platform.

I would think that another product that would be available is what we call an engine which is the heavy audio work and on the engine could be built a user interface of any specification that would suit a certain user group and that is, comparatively speaking, a simple task to do. So it is really hard to tell at this stage what would happen when the product becomes commercialized and so we will have to see that.

Certainly the specifications for how this is being done and how the data is being stored on any kind of computer storage medium will be published unofficial for anyone to make implementations of to help establish or taking into concern at least us being a standard.

RICHARD TUCKER: Rick Tucker, Students Library for the Blind. I would like to speculate on something. We have seen the system sometime earlier this year and appreciate very much the philosophy that lies behind it, that is for structuring the text. Structure it, archive it and then leave the problem of the delivery platform to the local conditions. And Stephen King said earlier today that they are going to be differences from country to country which determine what the carriers are.

So, if we are depending upon your structuring, how rigid is your structure going to be? And I am thinking of interlibrary loan, that if different countries take and use this type of approach to their own ends how exchangeable are those texts going to be? Is it going to be a problem or are we just taking a row of binary text with a software shell around it which can be used anywhere.

LARS SONNEBO: When you say texts?

RICHARD TUCKER: I am sorry, a file. A book is produced as a binary file.

LARS SONNEBO: Sure, right.

RICHARD TUCKER: With all this clever software around it.

LARS SONNEBO: Yes.

RICHARD TUCKER: You are talking about it being a standard. Is it going to be an absolutely rigid standard?

LARS SONNEBO: No, not rigid as I see it. Actually the format used for storing of the actual digital audio data is based on Microsoft standard multimedia file format the RIF specification and it is a derivative of that, which is probably also going to be registered as a DTBF by Microsoft, the Digital Talking Book Format.

The RIF specification is quite clever because it can expand. You can introduce new data items and new objects in the material and if the software that retrieves the information doesn't recognize a certain block of information it just ignore it that is in that standard. By using that you can be forward and backwards compatible in a way.

The rigidity or the rigidness in the system lies, well, I can't say it is rigid because you are perfectly allowed to have a book without any structure. You can have one section if you like. If you are not prepared to implement or get a hold of a recording system that does this kind of clever voice analysis and phrase division, you can have a single phrase in each section, but you can't allow any logical access to the material if you do, but the system doesn't say anything about it. It suggest, though, that you have.

The system is, of course, optimized for having a set of phrases in each section and for those phrases to be easily accessed by a minimum of retrieval software just by simply shifting them off the disk in a logical way. So in that way it is fairly trivial. The only thing we have done is to divide the material up into blocks and store them in the format that can reflect those blocks.

It is fully up to anyone implementing the Daisy format in a system it is up to them to implement new capabilities which are not supported by other systems and that can be done by simply introducing new fields in the data. It is probably better to cooperate than to try and improve the specifications in some kind of committee. So to keep it short, no, I don't think the format is very rigid.

RICHARD TUCKER: That leads me then to a supplementary, if I may, Mr. Chairman. How do you envisage into the longer term interlibrary loan or access to materials? It gives a whole new concept to interlibrary loan if we know that you have got a book in the language we can use and wanted, do you see the practicability of on line transfer or are we going to be talking about transfer on optical disk or whatever?

LARS SONNEBO: At present it seems fairly safe to say that it is better to keep to physical storage media like optical devices. I have forgotten the proper results, but I made some calculations on using ISDN for transfer of a music CD down to a friend in England and it cost me some 1,000 crowns corresponding to hundreds of dollars, and it would have taken 24 hours or whatever it was, but I mean with the current standards of communication it is not very practicable, but having said that that might change in two years time, you never know.

But if I had this system up and running today I would imagine that the cheapest and most practical way would be to give them a ring and ask them to send the CD ROM disk. But in ten years time or whatever it may very well be more practical to just connect their computer and download the necessary files, because we will have faster communication links and we will have better audio and speech compression methods used in the system, so you can reduce the amount of data being transferred.

RICHARD TUCKER: Thank you.

JOHN COOKSON: Lars, how many files does it take, what would represent a typical book, how many files are there?

LARS SONNEBO: Okay. There are two files per section, so if we take an extreme example the Swedish Book of Law, the main part of it, I think it was 1,200 sections I could identify. I didn't read them properly but I mean I skimmed through the table of contents at the library, so say we have 1,200 heading items and we have 2,400 files just for the data because we have an index file and a data file and then we have one book file, so it is 2,401 there. But for a typical, say for this physical examination that is almost entirely, no, we lack one chapter or whatever it is, but I think it is 250 sections in that and that is a highly structured material, then we have 500 files. An even more typical book is probably down to 300 files or something like it.

We chose to have this system using discrete files rather than trying to compile all of this together into one file, because it is more convenient to have those files, and it doesn't seem to cause any more major practical inconveniences with the current operating systems.

JOHN COOKSON: Do you code the silence? Do you put tokens within phrases too representing silence or is it only at the phrase boundaries?

LARS SONNEBO: Well, yes, in a way. What we do is that we have quite a clever, if I might say so, voice analysis module analyzing the incoming data stream and it makes some decisions upon the, not just the level of incoming audio but also on time. So we can actually identify that the narrator has stopped speaking and relatively precisely as well, and we can identify that battery of silence from say for example very soft voice sounds, sort of like the initial "s" sound or whatever which is very silent and looks to us when we look at the data plotted on the screen it looks very similar to silence but it isn't.

So the system can actually quite well see when and exactly when in a millisecond level that is, see when the speech starts, which means that we are only storing as objects which we call segments only the actual speech wave form as soon as there is a silence of more than what, let us say ten milliseconds which just count the period of silence and store that as a token.

JOHN COOKSON: This occurs within a phrase as well as a phrase background?

LARS SONNEBO: Yes, so from the user's point of view the phrase is the lowest level, but internally we have segments because we want to compress the silence to make the speech appear faster.

JOHN COOKSON: I don't know that it would happen, but at what point does it become an expansion instead of a compression?

LARS SONNEBO: Oh, oh. I know a terrible bug in a version and that might be the one that you have.

JOHN COOKSON: No, it isn't. I am not referring to that. If you speak in very short phrases then eventually if the tokens aren't long enough it becomes an expansion rather than a compression.

LARS SONNEBO: Right. But on the other hand it is very, as we have stored these silence as a token it is very easy to manipulate them in any way you like so the playback system can have a maximum amount or minimum amount so that it didn't realize, didn't reproduce silence up to more than a certain length or whatever, so we find it quite efficient to be able to handle the data on this level.

On the other hand another recording system may not be interested in using that technology with its segments but may concentrate on having phrases. We don't need to use this segment, a phrase can contain only one segment, if you want.

JOHN COOKSON: One of the concern seems to be interlibrary loan and one of the things that occurred to me we might consider is the kind of arrangement that is often done in the area of image representation where we select some central format. Let us say today the format is found on commercial CD music, 44.1, 16 inch disk, and somebody wants something different then it is their responsibility to write a conversion program to get you to that common point and then anybody else who wants to use the material will know that that is a common point that they can begin from. That is something to think about.

LARS SONNEBO: That is something to think about.

JOHN COOKSON: I guess when you do that I guess you loose the richness of the peripheral starting points, but at least you are assured that there is a -- I guess it all relates to what do we mean by compatibility.

Another question, and this might relate to what I just mentioned. It might relate to coding techniques, what might become industry standard coding techniques and I guess the sticky point there is you could go off in some direction and decide to code your collection using a particular, let us say ADPCM, it seems to be popular now and then some time later the world says, well now it is MPEG.

LARS SONNEBO: I have heard MPEG being described as the future and ADPCM as the past. I don't think it is that simple. I mean MPEG is one possibility. We might have ZPEG in the future, you never know. I think, John, the only important point here is that the system should clearly mark up anything that it does, identified by a generalized and standardized set of tags.

The Daisy system is using the same format specifications as found in the WAD files for multimedia and WAY files used by Microsoft in this multimedia extension and all that. And in that format you can register new formats by Microsoft such as MPEG audio and you have a full specification of the sampling frequencies and the various technology details involved. I think that the most important thing we can do is to have everything specified clearly so that we can make systems in the future that is compatible with the data we produce today.

Of course there will always be better and better compression techniques. Currently I think we are in a very expansive stage, the only problem we have here is that the production and making of the Talking Book System is not full in line with what the commercial market is doing. The market is very interested in multimedia and stuff like that, but it is quite far from having a talking book. You can't simply use the current things that are there because they are not streamline to that.

The reason why MPEG is so popular is because, I think, there is a need in the industry to store music along with digital video and stuff like it, store music in an efficient way. The format is ideal for streamlined output of long segments of music. It is not ideal for creating small tiny segments and having them output and treated in this fashion that we do. That might change, but I mean the complete market is not working our way so we have to find our own way, so it is quite hard to take on certain kind of technologies. But in the end we will definitely have something that is better than we have today.

JOHN COOKSON: I thought one of the things we might do and it may not be appropriate now, but in the following ensuing discussion you talked about some of the hazards of selecting a particular recording medium and then having to change later because you can get strange unpredictable artifax that occur when you go from one method to another.

Maybe one topic or one area of agreement we might consider is to what level would we be willing to risk the original material. These algorithms have parameters that you can do as much violence you want to the original material, but that makes recovery that much more difficult.

LARS SONNEBO: Yes, it does. And of course everyone here is dead scared of betting on the wrong horse, so to speak. I mean it sounds like a catastrophe.

JOHN COOKSON: We might be able to discuss the horse that has various levels, actually. How much to put on it or something like that.

LARS SONNEBO: Right. How many horses. Upstream or downstream horses. Yes. There are many issues in this, of course, and I think that the most important thing currently is to not lock yourself in and let whose horse be as loose as possible, but we must still know that it is a horse because otherwise we can't bet on it or something like it. That is an analogue for you.

I think it should be pointed out, though, that TPB with their organization is not necessarily that interested in the infinite perspective and the infinite lifetime of their materials because study material by its nature is not very long life, is it.

CLIVE LANSINK: You have obviously gone to a lot of trouble to differentiate phrase by phrase and sentence by sentence and so on by detecting pause and marking that up as you go along as it were. Now, have you actually got any evidence that that is more helpful than simply providing the listener with the ability to just step forward and backwards through their steps, say five second or ten seconds, in other words I can see how you would want to find, let us say chapter seven or skip to the next paragraph or to the next sub heading within a chapter and so on, but is it really important for a listener to go sentence by sentence? Or is it not reasonable for the listener to just be able to if he missed a particular detail.

LARS SONNEBO: Yes go back there, but go forward as well.

CLIVE LANSINK: Or go forward as well.

LARS SONNEBO: Okay. We have no evidence as yet, we will have to hear from the users during this autumn, but I think we are on the right track anyhow because I view the notion of the time here, the seconds and minutes and all of that as being a thing inherited from the analogue tape and it is not necessarily of interest to the reader how long it took the narrator to speak that amount of text, the interesting thing is what does he or she say.

CLIVE LANSINK: I guess the only point I am making here is where do you draw the line? By word? Or is it really sentences we are interested in, or is it paragraphs we are interested or as I said section or chapters?

LARS SONNEBO: Once again it depends on how careful you want to be as a producer, but it can definitely be down to a sentence level, but not down to word level I can say, unless the narrator is prepared to speak word by word and make pauses in between, but it wouldn't be very nice to listen to it anyhow. So you will get down to the sentence level. But if the sentence or the phrases do not correspond exactly with the original, whether they do or not is of, I think, not that high significance because we can always jump to that, listen to it and find out that it isn't the thing I am after and then move to the next one. It is quicker than having to look at it all. And you are not jumping by random, you are not jumping five seconds or ten seconds, you are jumping to the next utterance from the narrator to see if that was the thing you were listing for. So we will have to see.

CLIVE LANSINK: Yes, but it is a question of whether or not to design the system to that extent and whether or not it pays dividends, that is really the point I am making.

LARS SONNEBO: Yes. But what it does it saves data and it breaks the data up into quite natural and quite manageable units which is quite interesting from a computer's perspective. It is easier to handle and to create a system. I take your point, and we will have to see what happens.

STEPHEN KING: I have two questions and they are slightly related, but I will spit them both out. The first one is there are two sort of basic types of libraries represented in this room which reflect our history, I suspect. One of those who are serving student and academic material, and that has been the focus of your project. And the others who are providing more leisure reading material and public library type of material. Actually as an organization RNIB we try to do both.

Now, the division up into sections, have you got experience on how that might affect the listening experience in some form of dramatic presentation so one is actually reading some fiction book, you may well still want to divide that up into some sort of section, is the pausing that is required going to actually interfere with that experience?

The second question is in this system one is storing the final product as a compressed file, there is often a second reuse of an original recording, you might want to go back to it to do something else with it amongst other things, it can be reused as a commercial product, you have now stored something that you have described as AM quality radio, is that going to be good enough for future reprocessing of that work?

LARS SONNEBO: Well it depends. But once again from TPB's perspective it is very rare or it doesn't happen that a piece of study literature becomes used in any other way so it is not an issue, but from a more general perspective it is of course important to have the material kept in such a quality level that it is acceptable for reuse.

If you are making the recording directly into the digital system you must choose a storage format to give you the quality that you are after, and it is a balance between the trade off between storage space and quality, of course, and hence money, and for a large Talking Book that is not to be read as fiction you would probably be forced as a producer to use a somewhat lower audio quality to make it fit in on one disk or to make it economically feasible.

On the other hand if you have a piece of fiction that doesn't take up that much space and you are prepared to "waste" a CD ROM on that storage you can use a very high level of audio quality, so it is quite dynamic.

I haven't answered your first question yet. I am not sure how to do it really. If you would like to develop it a little bit further, Stephen.

STEPHEN KING: I am talking now about some leisure reading material which may just be a dramatic presentation of an exciting story and does the pausing that is required to allow you to break it down into sections is that going to interfere with that presentation?

LARS SONNEBO: No. As long as we are not particularly interested in the user gaining exact correspondence in the phrase and a sentence in the book, and this is not the case in a piece of dramatic fiction literature I would imagine, then it doesn't matter. The only point in having the phrase division then is to save storage space and maybe to make it easier to retake a sentence or an utterance.

STEPHEN KING: For example what calls to mind is perhaps some Shakespeare or something where it is often indexed down to some paragraphs.

LARS SONNEBO: Of course. Then the narrator shouldn't have to be aware of pauses and stuff. But you can just set up the system to register anything above say one second as a phrase division boarder and then they could just stop thinking about it. I would imagine that is the best, it would definitely help the dramatic quality of the piece and then see what happens, so to speak, see how use phrases you got from it. Or you can set it to really short pauses and then have it divided up into a large amount of traces which might help a user in retrieving the correct piece. But in fiction literature typically it is of less significance that the phrases correspond to anything like a sentence or a paragraph like it and then it can be left out, I think.

The sections is another story because the narrator should be fully aware of each section boarder by entering a new stage of the recording or whatever, selecting a new heading to record under or so.

ROSEMARY KAVANAGH: I just wanted to comment on the leisure reading bit. We have to remember that we speak of leisure collections, but in our case where we try to provide a comprehensive library service a good proportion of our collections are made up of non fiction materials. And those have pretty extensive indexing in the print version at any rate, so it would still be relevant in this situation to have good indexing of the non fiction material even for those leisure reading purposes.

I do want to add that for us as well at the CNIB library we do some of the major contracts across the country for text books for student use so that would be very relevant for our students to be able to have that kind of indexing capability.

LARS SONNEBO: Yes. And if you think about a normal printed book, the book where we are trying to give a non sighted or typical user access to that book, that printed material is indexed in this manner. I mean it has sentences, it has pages.

ROSEMARY KAVANAGH: That is exactly correct.

LARS SONNEBO: Okay, Mary?

MARY SCHNACKENBERG: I wish to pick up on this leisure reading issue. One of the difficulties with the leisure reading concept is that it is sticking labels on people and materials and people are different and materials are different and they are used in many and very different ways. While I have a lot of sympathy with the readability aspect of the sound, how pleasant the sound reads aloud, I have had many situations where material recorded in a so called reading environment has had to be used by students because there was nothing else, and all sorts of information has been missed out, like tables of contents, like chapter headings, like spellings of words because somebody has decided that it is quite leisure reading and blind people don't need to know these things. And it makes me very cross.

Now, moving on to my question. In the environment for elderly folks or for people who simply want to listen to something uninterrupted without markers and without page numbers and without times and without anything like that is it possible to switch on and off the index markers? For example would you be able to say to the machine I would like you to read all footnotes? I would like you to read all the verbalizations of graphics? I would like you to spell all the tricky words that the narrator has been smart enough to identify and might not be able to spell? Can you switch on and off options like that because that kind of flexibility is something I would like to see designed into the indexing system.

LARS SONNEBO: The answer is a big yes actually. And I can be sure about it because in this particular system every phrase is identified as some kind of information container. It is put within the structure from the original book and it has got a unique ID, some kind of identification in the system, it belongs to a position. It can also have attributes of various kinds.

At present we haven't defined all these wonderful features that you mentioned, we haven't implemented all this, but I think quite a few or all of them would be in the end product because they are beautiful, all of them.

You see every phrase could be tagged with one or more attributes, this could be absolutely feasible, so for example you could have in a typical play like Hamlet you could choose to listen only to the things Hamlet is saying in one go and then switch to Ophelia whatever, if that was for a study purpose or any other purpose. But it is only a matter of deciding upon what properties should be in there and standardize them. I think in this you are more than welcome to cooperate with TPB to try to set standards for this because I think it is quite important.

We could implement various kinds of user interfaces to the same data, as I have already said I think, but even within the same program you could have a reader profile if you wanted in that program, specify I don't want certain phrases with certain attributes to be spoken or I only want those. It is a very simple matter, really, for example to have page numbers, phrases that are marked to be page number references being left out for the purposes of reading or dramatic reading. Or you could have references read out or explanation of spelling or whatever it is you want. It is only a matter of identifying what kind of attributes we need for phrases.

ROSEMARY KAVANAGH: How difficult is it for the narrator then, reading the system?

LARS SONNEBO: I mean in the simplest terms it is only a matter of reading a section at a time. They have to be aware that they are starting a new section and check that they are on the correct place, so they are actually narrating chapter 2.1 or whatever. We could, if it is not extremely critical, the phrase division how accurate that is, if that is not too critical the narrator could just read, he or she doesn't even need to look at a computer it can be outside. But the typical situation is probably that there is a monitor screen and a keyboard on the table somewhere in relation to the narrator so that they can glance at the screen and check that they are in cinque or stuff like it.

A narrator that wants to do all the work him or herself could, of course, make all the page breaks and group divisions on the frame while recording. In another case a narrator or technician could do that work in the post editing process. In the post editing process you can just jump through the material, locate the correct phrases and give them the proper attributes. So, if it was desirable the narrator could be lifted off quite a lot.

The ideal is probably to start, at least, with a situation very similar to cutting through the current situation in the studio but with better tools. Because of this phrase philosophy, the narrator can easily correct a mistake if a phrase is misread it is very simple for them to retake that phrase without having any tape measurement or counter values or wait for the green light and all that. So it can probably be easier.

KENNETH JERNIGAN: You know, when the typewriter was first invented if you had asked people if it was useful most of them would have said no, because nobody knew how to type. So you invented the technology and then people had to learn how to use it and they got good at it; and all of that is to say this.

I have come to wonder lately if the narrator or the reader, and I know this may shock some people, is not already obsolescent and beginning very fast to become obsolete. And I say that for this reason.

If you listen to the voice on the Braille and Speak and many of us in this room have heard it, you think that there is never a way on earth that you could listen to that and that you would go mad if you did and it wouldn't be of any use to you on your way there.

Now, after a while I am told by the Braille and Speak users, I am not one, that the Braille and Speaks sinks into the background and all that you are aware of is the flow of thought, on a technology I am going to describe to you later if I get a chance, digital voices used and many of the problems you have mentioned are obviated they are taken care of.

I wonder really, for instance in my own case, as I listen to a digital voice, contrary to what some people say, I am not annoyed by it and ultimately I like it better than I like the live reader in many instances because I am unaware of it, it simply becomes a flow of thought, and if you think of Shakespeare which you have been discussing here, sure, you can hear Shakespeare, the actors can get up on the boards and they can pound the stage and make the gestures, but you can also do it in your mind. If you read you don't always when you read Shakespeare say it aloud, it flows into the mind and the mind would do remarkable things with it, so it is with digital speech, and I really wonder if the narrator is not going to be totally outdated and if so we will save money by orders of magnitude and we will also solve many many scores of technical problems.

KURT CYLKE: There is a whole world of people, the human can go away.

KENNETH JERNIGAN: It might be a good idea.

KURT CYLKE: I wouldn't pursue this for any great length, but I would say, depending on the material that you are talking about, depending on the need for that material the reader may be redundant. I would argue that in the print world there is a variation in the material that is presented and the way you wish to receive it and so forth that would argue that for an artistic presentation I think you do need a human voice with human inflection.

When I dial, and Judy and I are fortunate and I don't know how many of you in the world have this, we now have an automated system on the telephone in Virginia in the States where a synthesized voice ask you what you want, for the department that you want, gives you the number and so forth, and I mean I chat with that voice on a regular basis, and for that that voice is fine, but for Shakespeare I would have said you use the wrong ---

KENNETH JERNIGAN: No, I meant just what I said, I meant Shakespeare. And I know that you have an artistic bent so I trust at times do I. But let me say to you, and that is why I started with the typewriter.

If you had asked people what you could do with it they would have said a different thing from after they learned it. Now, I contend that you get Shakespeare in your mind, not in your ears or through your finger and I would contend that you have not heard the voice you are talking about hour after hour in reading, and I have not to begin with and I began with the standard, either you can call it prejudice or viewpoint, whichever you are of a mind, and I began with that, but as I have read digital speech hour after hour I have begun to be totally unaware out of it and to get all of the pleasure I get from reading in the other ways. So I am not sure that you might not change your mind on that. I am not sure you would either.

KURT CYLKE: Well, if you are right I am glad I was born when I am.

KENNETH JERNIGAN: Mr. Cylke, there is a little poem that say: "My grandfather in this day of cogs says the world is going to the dogs. His grandfather in his house of logs said the world was going to the dogs, and his grandfather in the Flemish bogs said the world was going to the dogs, and his grandfather in his hairy togs said the world was going to the dogs and this is all I have to say that dogs have had a hell of a wait."

KURT CYLKE: With that let us take a break. We will take a break for ten minutes.

---SHORT RECESS:

KURT CYLKE: We are on now for the next twenty to twenty-five minutes. John Cookson is going to coordinate an open discussion. I would like to throw out a question which can be picked up after the next presentation or not afterwards.

What has occurred to me and I watch the scene from afar and I haven't had a conversation with anyone from Europe about it, but with all this business of the European unification and the good reports that you sent us and so forth, has there been any consideration given to a centralized production facility? You know a centralized European facility producing in the various languages that are required producing braille and audio and so forth?

You would thing that rather than talking to twenty or thirty countries with twenty or thirty standards as you talk to us, instead of having fifty standards you know we would be talking about one and then maybe, is that considered? Yes.

RICHARD TUCKER: There is a tremendous

pressure from the European Commission for libraries to move towards common standards. But I think the logistics of central production, and it is definitely not in any one small country like ours and we couldn't hope for central production, what we could hope for is some agreement on the standards being used. I mean that is the best we could hope for.

KURT CYLKE: Well, no, and my next comment and I don't mean to be presumptuous, but in our case we said we couldn't hope for local production and when we look at a State, and most of your countries would be producing in the library systems about the size of one of our States, we said that that would be too small, not cost effective and very inefficient and you can only work with a centralized system. Where you do produce you would have a multiplicity of languages, where we would only have say about four that were producing and two seriously producing; why not?

RICHARD TUCKER: There is the language problem, when you get enough readers, you may have 150 specialist readers, we are producing for schools ---

KURT CYLKE: Are they volunteers?

RICHARD TUCKER: Volunteers. We are one of five libraries in a small country, others themselves have as many readers.

KURT CYLKE: I understand. Anyway with that, John.

KENNETH JERNIGAN: I have suggested to Mr. Cylke that perhaps you would like to hear and experience something that we are doing in the National Federation of the Blind. We have established what we call a news line for the blind. There is no question now that the technology is there, we have set it up, I have it working and you will hear it. I have this conference telephone in front of me that Dr. Herie has kindly let me use. Let me describe to you first what it means and does.

We have made an agreement with USA Today and with the New York Times, every morning a little before 6:30 our computer, without any staff intervention, reaches out to theirs in another part of the country and picks up so far USA Today. We haven't got New York Times on line as yet, that agreement has just been reached.

The text is dumped into our computer and it takes a matter of minutes, just two or three minutes to do it for the whole newspaper. Then a software we have developed massages that text and arranges it so that the newspaper reader can by calling up on a local telephone line calling our computer can then select whether they want to start with news articles, sports the financial or whatever, then can start.

If you press one button you will jump forward an article, you could go back to the beginning of that article, you could jump forward one sentence, you could jump back one sentence, you can start the same sentence over, you can change voice tone, you could change speeds or read faster than you can read or slow it, you can also spell a word if you don't understand it or if you want to know what it means.

You have to understand certain things will sort of become automatic. I know for instance that FLA means Florida, I know that VA means Virginia. You don't even have to think of it it is just there.

What I said earlier about human speech and digital speech, I ask you to keep in mind and particularly about the typewriter.

Now, I was told at the adjournment that, okay, we are trying digital speech by tape and we both agreed that, well, yes you can't manipulate that yourself. Second, as to the acceptability of it, an hour's trial isn't enough. I thought that I wouldn't like this synthesized speech at all, I would say it took me about thirty hours of reading and one day I wasn't even aware of the speech I was only aware of the flow of thoughts, and that is what reading is. When you really get good at reading you stop being aware of the printed page or the braille page and you simply become aware of a flow of thoughts in your mind.

What we then intend to do is we will have a command centre, and we are now moving to the second stage, we will do that this coming week. Currently our computer is operating in the Baltimore, Washington area and so if a blind person in that area wants to get this information, he or she simply dials in on the local telephone and does it.

The next step is we are setting up local service centres throughout the country and after the initial start up cost, which is very little, the local centre, say we set up one in New Orleans, and we are about to set up one in Batten Rouge within the next month. We will each day contact the machine in that local service centre that we have set up and all it takes is a desk top size space for the machine to be there, no staff is required locally, no cost locally except for either four, twelve or twenty-four telephone lines, local lines.

Then after that the local sponsoring group will pay $1,000 a month and we will maintain the equipment. We will replace equipment, we will send them the text of the newspaper, and ultimately, what is planned is a network, and I say ultimately, I think two to three years we hope to have a thousand local service centres all over the country. Each blind person will be given an ID number.

Therefore, let us suppose that this individual lives, let us suppose Ms. B lives in Denver, she travels to Batten Rouge, she would have a directory of all thousand locations, all she has got to do is pick up the local telephone in her hotel room or friend's home, dial the local area; her ID number will let her access the system, she can read the New York Times, USA Today or the local paper because we are also going to get the local newspaper involved.

The technology exists, the cost is imminently affordable. Ultimately I suggest to you that books and all sorts of reading material, in fact we will now have a channel besides the newspaper opened up there where we can do books easily. Then if you get the text of the book from the publisher and never have to run it through all of the processing, the narration, the brailling or everything else then the blind person can get the text immediately upon its being available, and once you begin to get your library built that way and also it is easy to go from what we have to load that into your own computer if you want to for text.

We can't do that with the newspaper as yet because they have made us responsible for being accountable for seeing that only authorized people use their text.

With that if you don't have questions before we listen, I am going to let you hear the text. Okay here we go, we will see if it works.

Okay, now first they ask for an identification.

DEMONSTRATION BY MR. JERNIGAN OF COMPUTERIZED NEWSPAPER:

KENNETH JERNIGAN: Okay, I think that demonstrates what it can do. I would be happy to answer questions on that. For my part that lets me for the first time in my life be able to do with a newspaper what I want. I don't want to sit there and read the whole newspaper, I want to take about fifteen minutes and scan through and get a little dab here and a little dab there and go to financial, go to sports. If I want to read more of something then that is fine. If you learn how to do that you can go back if you want to know something. I take about fifteen minutes on that. I say I get so that I know GA means Georgia and I know he is going to say O.J. Simpson, and I know he is going to do that he does it all the time. You get used to that. Any questions?

KURT CYLKE: I just said I have fallen in love with the voice. I can't even introduce that machine to my daughter. We will have a virtual wedding and there is no problem.

KENNETH JERNIGAN: Now, Mr. Cylke, you have got to keep up with the times. Anyway, I want to say to you that we will, I am sure, we have the technology as you can see, we are improving the technology all the while. We already have people, the Chicago Tribune wants to join up with us on it. We are not sure if we are going to put them on nationally or not. We may simply put them on as a national newspaper. We may get one more national. Then we will put on local papers, we will build this network throughout the whole country.

I predict that in a matter of two or three years we will have ten thousand readers of this all over the nation. The blind person pays nothing for this, absolutely nothing. That is part of the agreement with the newspaper and we wouldn't let our local sponsoring agency charge for it. If we start down that road we don't have uniformity. We have got iron clad agreements with the newspapers of what we can and can't do.

So then your local sponsoring group, as I said, is only accountable for $1,000 per month, no staff. They need somebody each day to check and see that the paper is up and running that is all. If it isn't then they will let us know and we will fix it either by sending them a new machine to plug in, letting them send theirs back, or sending somebody there if need be or most likely by telephone we will fix the machine. We will replace the machine and keep it up to date, they have to have no staff no anything except room for the machine and pay the telephone lines.

DAVID MANN: What proportion of the newspaper is actually there?

KENNETH JERNIGAN: All of it so far except the ads, and we will have those in a few months. That is all of the text of the newspaper is there and we are working on getting the ads.

JUDITH DIXON: Which kind of ads? Do you have grocery store ads and things now, or just classified.

KENNETH JERNIGAN: I haven't gone through some of them because I am not interested in the ads, but I think that what we have now is news, life, sports, financial. I think that you don't have any ads there now and as I say we are working on those and we intend to put the entire text from cover to cover on that.

STEPHEN KING: This may sound like a silly question, was it actually today's paper or yesterday's?

KENNETH JERNIGAN: That was today's. That is one of the great disadvantages of the current volunteer type even dial type newspaper they don't get it until afternoon. As I said our computer goes out at 6:30 in the morning. For instance we will keep today's paper until 6:30 tomorrow morning at which time in three minutes we will have tomorrow's newspaper and so the blind person can get up at 6:45 and can read the same newspaper that you will read as a sighted person that morning. It is all done quickly and it will take literally two to three minutes for it to get to us and then to flash it out all over the network.

STEPHEN KING: And who pays for the telephone all?

KENNETH JERNIGAN: Which telephone call?

STEPHEN KING: The call you just made.

KENNETH JERNIGAN: Well, this one you can pay for. But the local telephone call, you see there are three telephone calls involved so I will tell you who pays for each.

STEPHEN KING: From the users point of view.

KENNETH JERNIGAN: But from the users point of view there is no charge because it is a local telephone line it is not a long distance, he doesn't pay anything, period.

KURT CYLKE: What you have is an unlimited local call system in the United States. We pay a monthly fee so there would be nothing added to your telephone cost.

KENNETH JERNIGAN: Yes, there would be nothing added. And there is no charge to the local user at all. And as part of that $1,000 a month for the local sponsoring agency we pay every day to send that by long distance burst of computer out to the machine in the local area, it is a relatively inexpensive thing, and then we also pay for the cost of contacting the newspaper's computer. And so we will bring the local newspaper in, let us say it is in Detroit, we will reach out in the morning at 6:30, and we may move that up a little bit so that it is available by 6:30, we will reach out, get USA Today first, get it massaged, we will reach out to the Detroit machine, bring that local newspaper in massage it and then we will send all of that back to Detroit machine and that could be done just literally in minutes. And no staff involved in it at all, and as you can see it works.

JUDITH DIXON: Mr. Jernigan, how does it

decide which articles to put first?

KENNETH JERNIGAN: It puts it the way the newspaper puts them.

JUDITH DIXON: Well, the front page I was very surprised when you went into the news that the bombing of Oklahoma wasn't the first story.

KENNETH JERNIGAN: I am surprised too.

JUDITH DIXON: And yet you went through seven or eight of them and we hadn't got to it yet.

KENNETH JERNIGAN: Well, I don't know what that means.

JUDITH DIXON: Do you think USA Today didn't have it in the papers this morning on the front page?

KENNETH JERNIGAN: I don't know. That would have astonished me. It would have had to.

JUDITH DIXON: I would have had to.

STEPHEN KING: I can probably answer that one.

KENNETH JERNIGAN: Look, every day we are supposed to get back the newspapers so I can't tell you why.

JUDITH DIXON: I wonder how far down on the queue it would be.

STEPHEN KING: Can I answer the question for you? Because we run an almost identical system, but just delivered in a similar way. Based on the newspaper's data base numbering system you tend to get the articles coming up in the way they have numbered them and therefore often the lead story is often the last article you get. They rotate the last day's so that is one of the problem. So actually usually in the software you invert the numbering system and then you usually get the latest stories first.

SUSAN SEIDELIN: But Stephen doesn't there exist an editor's list where you can get access and you can get the articles in the right order.

STEPHEN KING: Yes, there are some sophistication you can build in to get that, but it is a bit hit and miss at some times.

KENNETH JERNIGAN: What we will probably do, and you see you have told me something that really I didn't know and I should have thought about. The Oklahoma City obviously ought to have been the lead story. Now, if we are in reality going by a numbering system that is if that is what is happening it would be an easy matter for the software to adjust then to whatever and I think we can put that in in that way, unless there is some reason why that can't be done.

But you can see what I am really talking about, and that is you either can or can't get use to this kind of speech. I believe that most people will come to the same place; as I began with more prejudice with this than most, I began with Mr. Cylke's attitude that no machine is going to replace the human voice.

KURT CYLKE: That is not Mr. Cylke's attitude.

KENNETH JERNIGAN: Sure it is.

KURT CYLKE: It just depends on what you are listening to. Newspaper articles I would accept that there are artistic pieces that I think ---

CLIVE LANSINK: Can I make a comment along those lines? I am very impressed for staff. I have heard about the NFB paper and have now had a demonstration on it, so thank you very much, and I also agree with the observation that really when it comes to getting hard information we don't really care what it sounds like we get used to the speech.

I just wonder whether or not we might not be in danger of confusing information with entertainment and enjoyment, and it is a little bit hard for me to really comprehend reading some kind of a suspense story or a murder mystery or something like that or Stephen King, a horror story, to be reading that through a totally synthesized voice. I mean it may well be that ---

KENNETH JERNIGAN: Through your eyes or your fingers? I mean you don't read through your eyes or your fingers, you read through your mind.

CLIVE LANSINK: I agree, you do. But when you do that you are in fact, at least what I am doing when I am reading I know what I am sort of doing in my own mind.

KENNETH JERNIGAN: Exactly.

CLIVE LANSINK: I am not sure, though when I am reading it thorough braille I am controlling that crisis. When I am hearing it through the narrator the narrator controls it. When I am hearing it through a synthetic speech then of course the synthetic speech is to some extent in control of the speed at which that crisis is occurring. And when you are reading something for the value of its entertainment, suspense and so on, the nuances that might be conveyed through the pausing and the delivery of the atmosphere, I am not sure if you could recreate those in your mind if at the same time the synthetic speech voice is just moving right along at its normal speed. So I think we need to find out about that.

What I am really saying is that there might be quite a distinct difference between getting information such as news and factual type of information that we all want as blind people and enjoying entertainment which may well be something quite different.

KENNETH JERNIGAN: My purpose is not to debate, but let me simply give you one more thing, for this is an aspect of it which fascinated me. I wanted to know for my own personal benefit I did want to know what are the limits of it. Now this, as you know, is the same voice that is on the Kerzweil Reader, okay. So I sat down with a dramatic book, not a newspaper but a book, fiction that I thought I would like and I started reading after I tried this newspaper, and at least for me, I can't speak for other people, after I read for a little while I realize with a start that I was no longer aware of the voice at all that I was only aware of my interest in the drama of the thing.

So at least for me I have answered that question. That doesn't mean that works for anybody else. But I urge you not to consider one hour or even two or five, because my guess is it takes about thirty hours before you reach that threshold. Maybe some people will never reach it, I don't know. Anyway that is all I know about it.

SUSAN SEIDELIN: I think there is an informed issue about all this talking about how to let the machine read the text, and that is the machine can't analyze the text, which means that it can't make any right pauses in the text because it doesn't understand the text. That is why Hamlet will be awful and US Today will be magnificent in that kind of aspect.

KURT CYLKE: But different strokes for different folks. I mean if Mr. Jernigan wants a machine he should have a machine.

SUSAN SEIDELIN: It will come some day when we find this machine is completed and ---

JUDITH DIXON: It does respond to punctuation.

KURT CYLKE: But at any rate, John.

JOHN COOKSON: We do have a short time left for our discussion, and we do have some discussion periods available tomorrow which are open and so you might think about what topics you want to consider. Also you may consider now or in the interim what your expectations for this meeting are, what do you expect to get out of it, what would be the best kind of outcome from our gathering here, what benefit is there to the consumer.

Hopefully there is a lot of benefit and how do we make the best use of that. Is there something you need to do to ensure that that happens. There are lots and lots of questions that we can consider. One of the obvious reason for this diverse route is to ensure that specific implementations of our future technology will guarantee some sort of interlibrary loan or some sort of compatibility. And a good technical question is what do we mean by compatibility? At what level is there compatibility? At what level is there compatibility? What is compatibility?

I want to express my admiration for the amount and the quality of work that has been done in Sweden on the Daisy project which is very impressive accomplishment. Is that the answer? Is that the last word on the topic? Do we need to develop that further, where do we go from here? Do we want to collaborate in any way, are there resources that we can share, are there research resources? I mean we are all geographically very disperse, is there a way to manage that kind of disadvantage. How do we want to recommend user and patron participation in the development process and ultimately how do we manage all the complexity, uncertainty and risk involving the development process?

There are lots of very technical questions that we can enter upon too, but after that kind of overall big generalized summary, let me suggest that we can consider, let us say tonight and then we can revisit tomorrow and that would be a communication of the establishment of some sort of mechanism and what does that boil down to? It boils down to an internet listserve, some sort of regular convenient rapid communication mechanism that allows us to collaborate on our development and our research program.

If you agree that that might be useful then you can say more communication isn't helpful, or maybe you can agree and you will probably get consensus on that. Then what would be the nature of the communication, what would be moderated, who would host it, what would membership consist of or not consist of, what are the appropriate topics and so on, so those are lots of things you could consider. That would be something that would be useful or productive and helpful and we can spread these kinds of communication over a longer period of time. I believe this would give us an opportunity to make use of the best technical talent list in all of the representative organization.

ROSEMARY KAVANAGH: I just want to make one comment. I don't think that the Daisy Digital Talking Book System is the complete answer. I think it is part of what we need. But I think we have to go back to what Stephen King said earlier about the complexity of the environment and the fact that in the end we need a variety of product to support whatever we do.

For example electronic text is also an excellent way for students to access text books. The type of indexing and the capability and the dept of indexing that you will get from that medium you are not going to get from this, but this is certainly a part and a very import part of the answer. So for the reasons you have just said, we do need the ongoing dialogue because we see the solution as being a variety of things, not just one thing.

BRIAN KORMANN: Brian Kormann of the US. I think it is very important that we keep good communication going among ourselves. I am just wondering about communication within the industry, for instance Sony, Philips, has anybody had discussions with the industry, I am just kind of curious?

STEPHEN KING: We had contact with Phillips and they had expressed interest in the project.

BRIAN KORMANN: Oh, that is great.

JOHN GRIFFITHS: I have had communications with IBM on a project in BC on a system which is very similar, database, structuring databasing but delivering into a voice control computer system for voice output, voice input, which they have gotten now.

JOHN COOKSON: If I might share with you a kind of a general approach that we have. One of the central questions here is what is the shape of the future products or multiplicity of products, and where to begin? I think that Daisy is one way to approach that.

Prior to encountering that my thinking was that in terms of the ideal what I think we would like to have is, in terms of a modelling system, what is called a multimedia or perhaps in this context multi modem might be a more appropriate term. An off the shelf software package, we can go down to the latest software, take it off and it will allow you to as a producer in a finite period of time learn how to use the thing and make dual production. In dual production it has all the features that you will find in the Daisy paper or in some of my papers here; text, audio, large print and braille and that sort of thing.

But right now you don't see anything in the commercial market place that would allow you to do that and the closest thing that I have seen so far that at least promises anything is a company in California that is called Collido, that is developing the system based on yet another programming, one that is called Script-X. Has anyone ever encountered that or heard that? It is supposed to be an approach that is independent and allows for any possible data type and so on. That might be an alternative if that ever become a commercial reality.

I can relate to you some of the experimental audio work that we engage in our laboratory. For example the testing of coding method, if that would be of interest.

Another area that we might want to consider is designing experiments or designing interlibrary loan experiments. Actually, one of the things that happens, we for example have made some inquiries of the telephone company regarding some of their experimental video on demand delivery systems and regional servers and so on and inquired as to whether this made any sense in our context, and one of the answers, the first thing they ask you is, well, we might try something, where is your data set? Well, we don't have a data set. Well you can't talk until you have a data set. It is kind of a circular problem, if you don't have a data set then you have to design one, but to design one you have to decide what is the product like and so on.

So it becomes very circular and very difficult. But one of the thing is you just have to break the circle and start somewhere. In the laboratory now we have the Daisy system and that may be a place to start if we agree. And if it is maybe we would want to do some experiment on one organization generating the product and lending it to another one and see whether that communication actually works or not, and so that may be another topic for consideration or discussion.

Do we want to try an interlibrary loan and if so let us get down to some specifics and see how it works. One thought that occurs to me on that is you might want to try through the internet some kind of a low communication of say a small work. And then that immediately raises the issue regarding intellectual property rights, particularly intellectual property rights across international borders. So that is another fruitful area for discussion.

If we were, for example, to agree on some sort of a loan experiment, I would first consult an authoritarian librarian source to come up with some material that is absolutely squeaky clean with respect to intellectual property rights, so I think for experimental purposes that wouldn't be a problem, but beyond that that might be a matter for consideration, and then that raises issues of what systems are advisable and available and affordable and so on. That is another area for endless discussion.

So I am asking where do we go from here so to speak. In terms of continued communication is there anyone who has some specific suggestions or approaches or ideas as to how we might continue the development process or the research process.

STEPHEN KING: I think, from sort of listening to what you were saying sort of three very specific things came out and it appeared to me that we are looking for some volunteers around here. One is somebody to just host a list somewhere which we can all post to and agree what goes in goes in there, and somebody who is good at that, who knows how to do that, we are looking for a volunteer.

Secondly it appears to me there are three areas of research that we need to get some cooperative groups going on. I hesitate to say this but I think we don't want to get too hung up still on the technology. There is quite a lot of user and operations research still to be done, and I have written down on my pad sort of three areas which I think we ought to try and form some groups on.

Let me just take a step back from that. I think having got the Daisy system, let me welcome that project having distributed copies of that around, because that enables us to break that circle. We actually do have a platform on which one can start to trial some of the concepts that we are talking about as well as the technical thing. But we have talked about, well, how do you present information, and we have now gotten, we have seen this demonstration of, I think, it is a physiotherapy manual, we need to start to try out some cookery books and some gardening books and some encyclopedias and start to work with typical sets of patrons to try to work out how successful those approaches are compared to other approaches, so we actually have some good base data. So we need that type of set of research going on so we are quite clear on how and get some guidelines on how we present information.

Secondly as you said we need to start to talk about how could one have interlibrary lending. Just take it as a given that when we standardize on the Daisy format it would be that or something that looks like that, you know. What is it that you send, how do you actually get it out into the various other media? Because there seems to be a common understanding that within a country we may still all have different distribution media, so how would you get something like that out to somebody who is still using compact cassette.

The third area is very important to all of us who are involved in the actual operations of recording, is what are the operation realities of recording in a studio, what does it mean to what we are doing now and what are the changes, so that we can start to get some better handles on the costs. What are the cost implications of the various choices that one can make? As far as I can see those are the three areas where we have got to do quite a lot of work here to enable us to make sensible decisions. If out of this we can get some consortia going or just some groups who are going to get on and do it, I think that would be a good outcome.

RICHARD TUCKER: Could I just add one rider to what Stephen has said? There is always in any professional group the danger that you look inwards to your own colleagues in the same area and forget that the library world is much bigger than just the libraries for the blind and the services for the blind. A bit of an appeal to the European members here, but there have over the last five to six years been millions spent on developing systems and techniques which are parallel to what we are talking about today.

Within the EC's library program there have been three rounds of projects already funded. The fourth one is coming up funding, that represents a hugh amount of work and a great deal of that has been about electronic document interchange, methods of doing that, problems of copyright, problems of compatibility and it would be worthwhile making a cross check first of all to see who has invented the wheel that we want to put on our little cart instead of inventing square ones.

It will take some time, but it will be a well worth the investment of time to do that. And not just within the library program but within the whole of the telematics program for the EC because there are other areas, information, engineering, language engineering, things that don't at first seem relevant but have been projects in those areas of development which have done things which we are looking at including the transfer of audio documents, the Danish project. It is very interesting to look at that one. We need to look at it because it failed. And an examination of a failure is often very relevant to the development of the next stage.

I think that whatever has developed here or what comes out of this as a network of interchange of information that somewhere in that you look at the other work that is being done. There may be equivalent research bodies in North America which have also been busy.

JOHN COOKSON: Any more comments? I thank you very much, Stephen for your comments, I think they are right to the point and so at our next discussion I would expect someone to volunteer to host the list. It takes a little bit of resources but not a whole lot, it is not that demanding, I don't think.

I thought that, John, you were maintaining contact with the European Library Project or am I mistaken. No. Well, I agree we should definitely capitalize on whatever results they have got.

Also this type of communication gives us the opportunity to subdivide into areas of expertise if we find that necessary.

SUSANNE SEIDELIN: Yes, I suggest that we do not until tomorrow form this working group because I think it is necessary for us to have a little chit chat in the evening and try to find out who we can work with and what opportunities there are.

KURT CYLKE: Well, as a matter of fact it can't be done today because we have now exceeded our time limit. Rosemary is about to take you off on a tour.

JOHN COOKSON: Since I am moderating the discussion group tomorrow, my intent was to set the stage for that and get people thinking. Because we know that the real decisions aren't made here in public anyhow, they will be done tonight.

ROSEMARY KAVANAGH: Before I pass this on to Euclid, I will add one quick comment. Keep your eyes on the publishing business, a lot of it is going multi media.

EUCLID HERIE: Okay, first of all Stephen King is mentioning that the braille and the disks of the RNIB paper is here, so please, if you want to take it tonight as he has suggested they are in front of me here, so as soon as we get up if you want to pick those up.

--- Whereupon the hearing was adjourned at 4:20 p.m.

I HEREBY CERTIFY the foregoing to be a true and accurate transcription of my Stenomask Recording to the best of my skill and ability.

B. Doucette

Barbara Doucette - Verbatim Reporter

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THIRD INTERNATIONAL MEETING TO DISCUSS AUDIO TECHNOLOGY AS APPLIED TO LIBRARY SERVICES FOR BLIND INDIVIDUALS

Volume 2

HELD AT: The Canadian National Institute
for the Blind
1929 Bayview Avenue
Toronto, Ontario
M4G 3E8
Canada

DATE: April 21, 1995

CO-CHAIRED BY: DR. EUCLID HERIE
KURT FRANK CYLKE

---UPON COMMENCING AT 9:00 A.M.:

KURT CYLKE: Good morning. Just to review the agenda for today. The first paper will be by Judy Dixon and Mary Schnackenberg, Consumer Involvement and the Transition Process, discussion, break and then two very short, or at least one very short and perhaps one more lengthy conversation, one about the International Union Catalogue and the next International Sales and Gifts. We will break for lunch and then in the afternoon John Cookson will pick up with the discussion that he was carrying on yesterday afternoon, and then a tour of the CNIB and then on to Toronto in the evening with Euclid.

Before we start I would just like to remind those whose names did not appear on the agenda to give to me or to the young lady who is doing the transcribing your name and address and telephone number, fax and so forth and we will make sure it appears in the proceedings of the meeting.

Before we get to Judy's paper and Mary's paper, Euclid, would you care to say something?

EUCLID HERIE: Oh, no. Well, thank you and good morning. Bill Gallagher who is a good friend of mine, retired and an honourary life member of the World Blind Union, former Executive Director of the American Foundation for the Blind, Bill and I were musing one day after a late night, later than last night in fact and he told me a great Irish proverb to the effect that the discouraging thing is if you don't drink the night before so that you can get up in the morning you know that is as good as you are going to feel all day. Sorry, I guess it is early.

Could I have a show of hands of how many people may not be staying for lunch at the hotel tomorrow so that we can give them some numbers?

We have to confirm with the Marriott, it is a sit down catered lunch. I think it is Atlantic Salmon or something. Dr Jernigan wouldn't be there but everybody else will be.

KENNETH JERNIGAN: Unless you serve Fiddle Head Fern.

EUCLID HERIE: We will ask. I think they are in season now in New Brunswick. We will fly them in for you, Ken. Well, thank you very much. The same agenda follows us today. Kurt, over to you.

KURT CYLKE: No. Judy.

JUDITH DIXON: Okay, good morning. I know we spent a lot of time yesterday discussing a lot of the consumer issues. I was gratified every time someone made a point I thought to myself, we covered that in our paper. So we appear to have, I think covered this

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particular water front rather thoroughly.

I will just review what I feel are some of the more important points here, and then Mary will have a few words to say and then we will just open it up for discussion. I hope all of you have a chance to read it, and if you haven't you can do so now.

In fact I was talking about the fact that there are a great many people, especially potential users of talking book services. In fact we know in the United States that we are only serving about twelve percent of the eligible population, so as we are considering these things and making these decisions we are in fact considering them for quite a large number of people, so the decisions and so forth are really not insignificant.

In fact, who is the consumer? We keep talking about "the" consumer and as some people were saying yesterday that they didn't feel that there was "a" specific consumer but actually those things are also political, economic, jurisdictional decisions as well. Some organizations only serve blind people. Some organizations only serve legally blind. Some organizations serve physically handicapped as well.

So the consumer and who this mythical person is varies not only by the characteristics of the

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individual but it also varies by the definitions of the service providing organization, so each organization has to think of his or her own consumers or his or her own purposes.

And as we were saying yesterday, consumers are becoming much more demanding, the expectation of consumers, I think with the proliferation of choices and products, I mean now you just don't buy a can of peaches, you buy salt free, fat free, sugar free, low this, high that, I mean there is nothing that is simple anymore. And is not simple with household products, grocery store products is not so simple in the world of talking books.

As we were saying yesterday members of the population are quite varied, they are some that are technologically sophisticated, there are some that are not sophisticated and I mean the truth is here we don't know. We just don't know how the ATM, VCR using forty-year old of today is going to age, and what their technological sophistication will be when they are eighty. I think we really just don't know what kind of a machine this might be or what kind of a person this might be. But the decision is clear that decisions will be made and they need to be made on the basis of consumer needs.

The issue of consumer involvement we treated in some detail and the idea that you can involve consumers at a very early age, you don't stage in the process. You don't have to have an actual product that is all finished and you plunk down in front of somebody and you say; here, what do you think of this? That really is not involving consumers.

Involving consumers is involving consumers at the stages of the process where discussing, Gee, I wonder what we should do next? And then, well, we could do this and we could do that and the other thing. That is involving consumers at the earlier stages. And involving obviously more sophisticated consumers will be the one who will be easiest to involve and will be the most interested in being involved and would be coming to you and banging down your doors and saying, involve us. But in fact it is necessary to be mindful of involving the less sophisticated consumers as well, and it is also possible to do that.

We reviewed the various needs assessment. It is sort of a tricky conundrum when you are trying to assess the needs of somebody. If you walked up to somebody and said, what do you need? Well, I don't know. I don't know what is possible. And if someone doesn't know what is possible it is very difficult for them to articulate their needs. So simply just asking somebody what they need is not doing a needs assessment.

There are a variety of traditional methods for needs assessment and that really depends on what kinds of needs you want to assess, what population you are assessing, whether it is a far flung population, whether it is, you know, all the people in a small community. We go through this in some detail here that the idea of using other data that has been collected for other purposes to make certain predictions and assumptions about the population and there are some advantages and disadvantages of this particular method.

The key informant method is one that is used quite a lot in the blindness community, having organizations who have particularly good knowledge and representatives that are extremely knowledgeable and involved in these areas provide a lot of input on behalf of other people. The advantages of doing that are that you really get to the heart of what you are looking at very quickly and very easily.

There is also the community forum, and that is just getting a bunch of people together and sort of bringing them together and saying, well, what do you think? What do you think we ought to do? We could do this, we could do that. Basically getting consumers reactions in that way.

And, of course, the more traditional survey. Surveys I think are probably going to be least likely to be successful with this kind of a development effort. Surveys are really better when people have a pretty good notion of what you are asking them about and they can respond in an appropriate manner.

A particular thing that is touched on fairly briefly in this paper and I think it is really very very important and I want to talk about it for a couple of minutes. And that is the issue of the user interface. By user interface I am talking about this physical thing that we haven't even began to conceptualized. How would the user actually interact with it.

We were talking about voice recognition yesterday. I personally don't want to talk to my talking book machine. I mean I am in the middle of the night sleeping, my husband is sleeping and I want to read a book, am I going to say, "Machine, start." I am going to get thrown out of the room.

I think there are going to be times when it is not convenient to talk to your talking book machine. There are going to be times when there are some other ways that you might want to communicate with your machine.

There is quite a lot of work being done now, I mean right here in 1995 on the issue of user interfaces. I think most of you have seen the information kiosks that have become very popular. They are being put in postal services and train stations and universities and so forth, and they are just flat screens. They change the shape and size of the information that is on them with every new screen that is presented.

There is some work being done at the University of Wisconsin on how to develop a user interface that is as flexible and usable as the one that is there for sighted people, and they have done some very good work on this. I have seen some prototypes where they have actually got interfaces that have the flat screen constructed in such a way so that it makes sort of a hissing noise when one is running ones fingers around on the screen when it is not on a button to be pressed, when you happen to go over a button to be pressed it goes quiet and speaks the word of the button.

They had a sample with a university directory and it would be like, academic buildings, library, things like that and if you wanted to select one of these things, and the complicated part is how to select it. They had it set up so that if you wanted to select it you removed your finger from the button, which people

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found pretty counter intuitive because every time they found something that they wanted their immediate reaction was to touch it and not to take their hands away from it.

So they have revised that model now and it is now so that you keep your hand on it and you just touch a control button down in the corner of the screen. But these things are so usable that you can actually touch type an imaginary keyboard or you can hit the buttons arranged like a touch tone telephone, also again on this perfectly flat screen with the only feedback being the speech.

I think the issue of this community and this particular effort keeping track of the kinds of efforts that are being conducted by other organizations, academic organizations that are developing user interfaces is really important because the user interface is going to need to be as consistent and flexible and usable, and if there is something that people are using in other aspects of their lives that would be very useful also for their talking book machine is something we need to be aware of.

There are a few final things here. We talked a little bit more about the idea of involving people with print disabilities who might not be the traditional consumer of a library for the blind as they are currently configured. There are more and more print disabled people who are getting their library services elsewhere, getting them from public libraries, getting them from on line services and the fact that these people should also not be left out when you are considering who the consumer is.

There are a lot of professionals who don't use recreational reading services but in fact are using library services, using reading materials in special format and they are as much a part of this too.

So I guess the whole thing all the way through is simply involve the consumer at every stage and in all ways and all people. I am going to turn you over to Mary.

MARY SCHNACKENBERG: Thank you, Judy. I don't think there is very much that I would want to add to the presentation already given, and the paper stands pretty much on its own, other than to pick up on some of the things we were talking about yesterday, which really in summary is don't design down. Remember that consumers come in the widest possible variety of creatures and they vary from the ability to articulate, as we heard from Kenneth Jernigan to people who have got almost no concept of what is possible. As deliverers of services we have to outguess what is possible. We have to hear Kenneth Jernigan but we also have to lead others on, open the world, open opportunities up.

Too often I have been confronted with narrators and braille transcribers over the years who have said, blind people don't need to know this, blind people don't need to know that, to the point in fact even today as a blind librarian I cannot reliably catalogue RNIB talking books or Library of Congress braille. I have to go back to bibliographic on-line sources because the work in hand doesn't have all the information that print does.

Now, that is quite an issue. So really we have to look at the print, look at the original concept and say, what is it that sighted people are doing with it and why is it that we are not doing the same things with those things that sighted people are doing. But too often we say, oh, well blind people don't need to know this. That is not an atmosphere to which I subscribe in any way shape or form. So if you can remember to design for the breath of humanity.

Yes there are people who fear technology, there are people who are threatened by technology, but there are sophisticated varieties of overlay and sophisticated approaches that can be taken so that you might have perhaps one basic machine that has all the complexity in it, but you make it easy to use by providing a very very simple overlay for someone who is terrified by all the gadgets, and you take that and throw that overlay away and you are left with a wonderful keyboard that gives you total access to certainly everything for those people who want total access to absolutely everything.

Maybe you could argue that that is a tall order but it is no different than orders that we find in the motor car industry or the television environment or indeed any other environment where the world is designed for the range of consumer from the very able to people who are quite challenged by different concepts. So just try and design as globally as you can and the next blind person who tells you I don't need to know that remember the one after does. Thank you.

JUDITH DIXON: Discussion.

KURT CYLKE: Well, of course the meeting originally which we organized over the last three years or six years or whatever, was aimed at the two organizations who do design and produce machines, the RNIB and the Library of Congress; and the rest of the world has generally, historically, bought off the shelf or bought from one of the two of us. So I guess you are extending your remarks in saying not only designing but when you are buying and identifying you should do that.

The only other comment I would make would be, and I was interested to hear your comments on the bibliographic sources. Actually in this case, Mary, the blind person receives exactly the same type of service that the sighted person receives in terms of bibliographic sources.

When the Library of Congress generally, not counting the library for the blind, who also does it, puts out a bibliography for example for the general public it would be an author, title, subject bibliography. The only thing that is added in the case of the blind would be a word indication describing the product. Then if the sighted person wants more than that they would go to the bibliographic record which is less available for them, as a matter of fact, until very recently, than it would be to you. In other words a blind person would go in to the bibliographic record and get the full record.

But it is a generally accepted practice not to reflect a full total bibliographic record as displayed on the sheet that you have before you, the NLS bulletin, as is described there because of the complexity, but more practically it is far more than the average person wants.

MARY SCHNACKENBERG: Kurt the comment relates to the physical braille or the physical audio.

JUDITH DIXON: The physical braille book.

KURT CYLKE: Oh, not the direct.

MARY SCHNACKENBERG: Yes. The comment relates to the fact that the physical braille or the physical audio does not have the same as the physical print.

KURT CYLKE: Well, I understand, well, in 95 percent of the case that is not true, it does. In five percent of case, in our case, it is simply because you know we made a choice between academic need and the recreation reading need.

Now, there are specific examples where we varied that. We put out three Shakespeare versions, one for the general reader and then the Oxford and Cambridge version with full footnotes and descriptions and so forth. Of course there are other services which compliment recording for the blind in the case of the United States. I am not aware of the full range around the world but I am sure that they are there. I heard about the Dutch system and so forth.

JUDITH DIXON: Kurt, back to your other point. We have the traditional players, the US and the UK who have been designing machines, but now with the digital technology we have the advent of things like the Daisy system from Sweden and that is really changing things considerably when what one needs to do now is to just develop a software package for the purpose of reading. And I think that is really also what we are talking about in terms of, you know, whoever you are, wherever you are whatever you might be developing it can happen in any of the countries that are represented here that you will be developing products of having the effect of affecting reading and affecting access to talking books.

KURT CYLKE: Any other comments?

RICHARD TUCKER: I think the last point which Judith just made is crucial to what was said yesterday and what is in the papers, that there has been a paradigm shift from talking about "the machine". Your paper still talked about when you are designing the machine. The discussion yesterday was much more about a system, an approach, and several people said, well we don't know what it is going to be. It may be several machines. We are going to go on with the cassette machine for quite some time, there are going to be things running in parallel. It is really much of a major philosophical change, and whether that implies that the major producers, Library of Congress, RNIB, will continue to make their own system dependent products, protecting the product from general use in some way, or whether you move over to consumer models to actually be the carriers of the material in the end is perhaps less crucial to the overall debate than arriving at some decisions on the process, on the business of recording, structuring, archiving and delivering, and it is only that last part where we talk about a machine.

Now we already have a variety of machines in the world at the moment, the talking books being delivered by consumer products is being delivered on cable. Certainly in the States there are a lot of broadcast of talking book going on for journals. There is a whole variety right now, and I think there is going to be at least just as big a variety in the future, and it was crucially thinking of the system rather than the machine.

DAVID MANN: Can I make a comment. I would like to make a plea and then follow it by a question. The plea which will be very familiar to one of my RNIB colleagues is one of my hobby horses is that we stop talking about machines and start talking about talking book players. The reason for that is whenever you use a non standard format as we do in a lot of countries at the moment be it Clarke and Smith and four track, you need to sell the talking book library or the concept of reading by tape even to a lot of people who are not use to it who may feel they wouldn't be able to adapt to it.

You need to present it as normal and every day as possible, and a machine can dig up the road, a machine can make sausages, a machine is really quite frightening. What we have got is a cassette player or a disc player which happens to be a non conventional format in a lot of cases, but we want to make it sound to the non user, to the potential user, to the person grappling with sight lose as normal and ordinary and friendly as possible, and say, please can we talk about players.

My question was, and either or Judy or Mary, I am sorry I can't remember which, rather denigrated the idea of surveys and thought that surveys did not produce very much useful information. I would like to explore why that is, because I think we do need to find useful ways of finding out what people want.

I would suggest that surveys might be useful if they are asking the right question. And the right question is not principally do you want the volume control on the right or on the left? The question is not what piece of equipment do you want but what do you want to do? Do you want to read from cover to cover and if so is it important to know where you finish reading? Do you actually want to look up chocolate cakes very often or are you happy to browse? I am sorry I am inevitably simplifying it. I would have thought that a survey which got at needs rather than superficiality could be a very useful way of developing what we need to do. I would welcome comments on that. Thank you.

JUDITH DIXON: I think you bring up some very good points there, and I think one of the points that Mr. Jernigan made yesterday is really very valid here. You can prove anything if you set out to do that. The survey is probably the assessment method that the surveyor has the most control over, depending on the questions you ask. How does the person understand your question? If you say to them, do you want to stop in the same place all the time or do you read the book cover to cover? Do you go on and explain to them, yes but you can set a book mark and with the push of one button you can get back to where you were when you turn on the machine, or you can have it automatically back up ten seconds so that you can hear the last word. I mean it just goes on and on.

I think you run a significant risk of people not really asking the question that you are really asking, because they don't know what is possible.

When you are surveying about something that is known, when you are asking them about their behaviour and making some of those assumptions on past behaviour, with all the factors known that's a reliable method of getting information.

If you are asking them, well, would you rather do this or would you rather do that, when they have never had the opportunity to do it and they don't really know what all the parameters are of the activity then you have no idea what they are responding to, because they don't really know what the deal is.

The other problem with a survey is that you are only going to survey your existing users. You can only survey people who know about you and you know about them and it also gets to only the people who choose to respond to a survey, which are the more active people who you are going to hear from anyway. I think the ideas of how to get to the less traditional user, how to get to the people who wouldn't be the ones to respond to a survey, and how to get to the people who are really putting a lot of thought into this is something that a survey is probably not going to do.

KURT CYLKE: Can I just comment on that? Judy, you will recall that we mounted, the Library of Congress, two fairly extensive surveys, one was a non user survey for people who didn't use the program and basically weren't aware of it. That was the most extensive, that was tied in with the --

JUDITH DIXON: It was 270,000 households in the US were asked about milk.

KURT CYLKE: That was a national type survey and we found the results there very useful, very very useful. When we did the user survey, which is a survey of people who were actually using the program we found the results very useless.

JUDITH DIXON: Ninety percent of the people tell us it was wonderful. I mean what good is that.

KURT CYLKE: It appeared that no one wished to criticized the program for whatever reason, the reason that would immediately come to your mind. But I would suggest that you can have some success with non user, you will have less success with the user.

STEPHEN KING: I will try and speak loudly without the microphone. Just picking up on David Mann's point on concentrating on needs. A little anecdote and thanks to our Canadian hosts. I do think that the point I made yesterday about, let us think about looking at what sighted people do, non print disabled people do, what are their needs; and recently print disabled people ask them what their needs are, and there were some very good illustrations of that yesterday.

When we went on our tour we visited two places. We visited the low vision clinic and we visited the employment, high technology area. It couldn't have been set up better, Euclid, because when we went into the low vision clinic there your colleagues were talking about what they did and there sitting on the shelf was a bible, and it was the only book sitting there on that bookshelf. We asked why it was there? And your colleague replied that it was a typical thing that people ask to want to continue to read. So there is the religious text. How can we continue to provide the religious text.

EUCLID HERIE: I hope it was the King James version.

STEPHEN KING: I am not very good at these things. It was a large print bible, but that was the typical text that people wanted to continue to read, so there it was.

And then we went into the employment area and they were showing us scanners and the CTVBs and all the other equipment there and we were being told an anecdote about people buying the eight thousand pound scanners there and what was it that the person did last week, somebody came in, she wanted to buy a scanner, what did she want to do? She wanted to read the cookery books because she wanted to continue to cook for her husband. That was the example that came out.

I think listening to or surveying recently blinded people about what their needs are and what are the things they no longer able to do gives us a lot of information about the services we really need to provide in particular areas.

KENNETH JERNIGAN: I am afraid that what I am about to say will not be controversial, because to be controversial a thing must have some people for it and some people against it and I believe there will be unanimity in opposition to what I have to say.

Let me begin with the observation that somebody or the other have said and I agree with it. I used to worship the common man and women until I found there was something better.

I think that to make the point I want to make I must start at a rather esoteric position. As far as we know human beings first learned to write or to set down records of what they do by pictographs, which was a mighty inefficient way to function. They then, well just plain pictures then pictographs, which leads one to the observation that it is exactly wrong to say that one picture is worth ten thousand words. I think that is foolishness. I think that one word is probably worth ten thousand pictures and that has nothing to do with the fact I think that I don't see the pictures, although some would say it did.

We went on from pictographs to syllable writing and then a tremendous breakthrough we went to the alphabets and to extract forms and then we got beyond that ultimately to mathematics, which is probably the ultimate language. What am I getting to?

Well, I think if you try to serve all audiences that you serve none well, and that we index at the lowest common denominator and that truly in the long run nobody is satisfied. I guess that makes me an elitist and I am not at all unhappy with the term. I suppose I am. But what I am getting to is this, in our designing and our thinking I believe we should put emphasis on the most capable and on the highest denominator we can and then we should not sell the rest of humanity short. A lot of people will come to that, but if we put our emphasis on the lowest denominator then everybody will tend to move towards that, and to those who say, well, but you see we must do it all. The answer is no, we wouldn't. We can't. We have only a finite amount of resources and so by doing one thing we necessarily do not do another.

I am reminded of a situation where when I was operating the Iowa Program for the Blind, a young fellow came to us who, according to the school officials who had worked with him all of his life was retarded. Well, we began to work with him and we told him you can do more than you think and we began to expect of him a great deal. I don't know whether he was retarded or not, which was probably another failing. We should have had him go through a battery of tests, we didn't. But we did enough to comply with the law. But what we really did was to start treating him as if he were a person with normal intelligence and expecting that from him. Today, by the way, he is gainfully employed and he leads a full life and far beyond what he was ever told he could do.

I wouldn't drag this except to say I think we should avoid the bromides as much as we can, that is we must serve all people and we must serve them all equally well if we do we will serve them all equally poorly; and I believe that a lot of people can come to a higher standard than we believe possible. In a sort of unhelpful way this makes Mary Schnackenberg's point but in a way that she might not approve of, I don't know.

I simply conclude these remarks by saying that I believe that there should be heavy emphasis with our resources, our planning and our thinking on a fairly high standard, and I understand the price that means we will pay. It means that some of the people who are least capable will either (a) not be served at all or (b) will be served less poorly than otherwise. But the alternative price should not be denied either. If we emphasize our resource on that group of people, in the long run, in my opinion the more capable group are going to suffer but also those very people that we say we love and work for and believe in and long to serve the most will also suffer. As I say I feel what I said will not be controversial.

ROSEMARY KAVANAGH: I just want to quickly comment. We have to remember that this survey is only an instrument and it is as effective as you design its purpose and to the extent which you heed it. In our experience at the CNIB Library we have seen many situations where when we forgot to ask our patrons in a timely manner we ended up spending money in areas where we didn't need to spend them or there wasn't really a requirement or the requirement had changed or expired.

One of the things that we did do was that we looked at both the non user, we looked at the user and we asked them what kind of information they needed to help them in their lives. What did they need for lifelong learning for pursuing whatever goals and what we found out was very interesting. We then took that and benchmarked it against what was being provided by other libraries across Canada and the result there was very interesting.

We benchmarked it against a study that was done by the Federal Government and we discovered that their needs were no different and that they had the same requirements, but somewhere in the past because we had to use Mary Schnackenberg's words, design down we left out many of the critical things that they really could use, by making some basic assumptions that had stopped to be relevant or stopped being relevant or which we hadn't spent the time to readdress at all.

So those things can be very useful and they can be very effective in doing exactly what Dr. Jernigan said, which is how do you spend your resources and where do you target them? But certainly it would be far more meaningful if you are doing it from a position of a little but more knowledge than just guesswork.

EUCLID HERIE: Well, thank you. I want to make two points and really as a consumer here since we are on that topic and not in my responsibility in my organization, although the two things are not exclusive necessarily.

The first point is about surveys. I know when we do surveys in Canada, as Judy says they come out at 90 or 95 percent, and I guess that is because you get people at the time when they have got ten books to read and the tape isn't broken in the middle of the book and a few other things. But if you are going to do a survey of a captive audience I think you have to be a little careful how you design that if you are an amateur researcher or if you are a professional. If I want to be surveyed about what I think about models of vehicles, there are four hundred vehicles that I can purchase and I have selected one, or if I am in the cola war or whatever or pizzas or whatever you want to talk about, in our business quite frankly, and certainly in Canada there is no choice.

The public libraries in our country are now in the last decade only beginning, and in a few cases, to develop fairly sizeable two-track collections, most of which they have bought from us, now with commercial sources they are able to expand that. So if we go to the eighteen thousand readers that we have in Canada I guess the first reaction is going to be, this is better than what? I mean you say, how is your spouse? Compared to what?

Anyway, my second point which I want to just again mention, because I have been talking about this for a long time, and again it is not intended as much as a criticism as a consumer response and you can take it for that. Because the people in this room, or I could say in this world but essentially you don't represent all of the countries, there is Spain and a few others who are pretty influential in our field with their resources and other countries who aren't here and the so called developing world which is developing rather quickly in some cases, is to do with the talking book machine themselves.

I guess that I should be suspect in the sense that Mohaiman Sadeek who sells the Bit talkmans, whatever he calls them now, is a friend of mine so I will declare my conflict of interest from the beginning. For ten years or however long I have know him, I have encouraged him towards the import and sale and distribution of what I call the throwaway talking book machine, something that if we had bought them in the tens of thousands we could have bought them for about $30 or $40 a piece and that after a year or two or even a year if the machine was finished and the warranty was out after sixty days or whatever you threw it out. Now, you could say we throw a lot of things out in our society.

The point that I have made is that unfortunately because he was a single source person and had problems with his sourcing of reliable equipment because he still has to take equipment and adopt it, but it is interesting that recording for the blind in the United States and other countries, I meet all kinds of blind people who travel with these machines, rechargeable batteries and so on.

I have been trying to get our CNIB library to issue them instead of the blue machine. For one thing they are half the price. The other thing is that people perform them. And don't tell me that people can't manage them because some of those playback machine he has are simpler than the blue machine. And I know all about standing up and the blind people supposedly play their machine for twelve hours a day, well we don't all do that, some do. There are people who also read twelve hours a day, but the world doesn't read twelve hours a day. You know we have got to get rid of some of these myths and stereotypes.

I have looked at the machine, the digi cassette type of machine that APH tried to produce and I think it is off the market now. I remember the RNIB and I don't know if you are still producing that small adapted Phillips machine that you were going to try and sell, maybe you are, and again I can go to other examples. It is not a criticism but as we look towards the next generation, and if it is not going to be the compact CD player that you can put in your pocket that we have seen from Sony and so on or a version of that I still have an appeal, that really some type of inexpensive portable machine, and yes if it requires batteries, people buy batteries for their walkman all over the place. Every jogger in this city that you see with them. Rechargeable batteries and so on.

There is a consumer need and a demand out there and I think as organizations look at your massive capital and investment. And I am thinking of that Clarke and Smith machine. I mean where can you carry it? And where would you plug it in? You certainly wouldn't play it in your car, or on the bus. I don't know if there is a portable version of it now, I may be out of line with that.

We are grateful to have the telex machine. There is no question. It has been the workhorse. We have about thirty or forty thousand of them that we have had, but we now know also that as the machine ages they break down more quickly, sometimes they have broken down even before we get them to the person's home. And I get this feedback from all of our people across the country, and we have to keep buying new ones and it is expensive. We also know that when we open the machine it is $80 to repair it. So if you had a $40 throw away machine you might want to think about that.

Those are just my views on that for your thoughts. I do not want to debate it with anybody but I can tell you that I am going to keep saying that in every forum I go and I hope I meet more and more Haiman Sadeeks.

KURT CYLKE: I wouldn't debate it, but let me make a few comments. We gave a great deal of thought to the portable throwaway machine and they are approximately thirty of them on the market, and we gave some other thought as to what the obligation was to the blind community. The person that you are talking about, the travelling person, the professional person, the educational person, the person that can handling that machine we came to the conclusion it would really be a prejudicial statement to provide them with a free throwaway machine.

EUCLID HERIE: Give them the choice.

KURT CYLKE: No, you should buy one if you want it and do whatever it is you want.

MARY SCHNACKENBERG: That is what we are doing.

JUDITH DIXON: It makes sense.

KURT CYLKE: That is what we encourage people to do. And saving that part of the market and thinking that our money was better spent on people who weren't in a financial situation, you are talking probably about, and I stand to be corrected, eight percent or ten percent of the market, perhaps less.

JUDITH DIXON: I think it is probably a little more at this time. It is going up anyway.

KURT CYLKE: But you know I don't think there is any question that there is room for that machine. We encourage, not only Mr. Sadeek who only has about one version of them, but as I said there are twenty or thirty on the market ranging, you get what you pay for, ranging from okay to not okay. But I don't know if that would be the library's role.

EUCLID HERIE: There are thirty versions of the four tracks.

JUDITH DIXON: Well, it depends on how you count. I mean Mr. Sadeek has about six of them.

EUCLID HERIE: That is right.

JUDITH DIXON: And if you count each one of his as an individual machine, I mean they are different. Some of them can record, some of them can't.

EUCLID HERIE: I have got five.

JUDITH DIXON: So do I.

EUCLID HERIE: I am going to show you one tomorrow morning.

JUDITH DIXON: But there are probably are twenty or so anyway.

EUCLID HERIE: It was just a thought.

JUDITH DIXON: I would like to respond to Mr. Jernigan's comments because I think it is a point that really bears a lot of discussion and a lot of emphasis. Mr. Jernigan, I think I am going to end up agreeing with you, but I am going to arrive at it in a very different way.

I would have agreed with the scenario that you put forth if it was twenty years ago and we were talking about developing our current cassette machine, which is essentially a fixed finite electrical device. It does what it does, you don't have any options, you can't change it, it is what it is and it is all that it is going to be. But I think we are presented with a real opportunity here as we move to a digital format that digital format is going to come with all of the baggage that is associated with modern devises, modern micro processor control devices. And what that means is options and choices. And I think if the machine, and David I think you made a good point too about talking about the machine and so we are going to use the term machine here in a virtual sense.

So I am only using it as a way that we can discuss it because it is the virtual machine, it may be physical, it may be somewhere else but who knows, but the machine for want of a better term.

I think the machine, if it is designed for the lowest common denominator, that is all it will ever be. But if it is designed to do everything for the highest possible, if people want an index on every word, you know, with hypertext links and book marks and you name it, but that machine being microprocessor controlled can be made to look like a very simple machine that just simply plays and stops, or does as much or as little as you ever wanted it to do. And that would be completely transparent to the user. And then the day the user calls the library and says, you know this is really a nice machine but I sure wish I could pick back up where I stop more easily. Well, we you select, we will send you a new overlay and give you a code to put in or whatever and you can make it into a different machine.

I think the idea of designing the machine for the most sophisticated user and then from that selecting subsets that would meet the needs of users all up and down the scale and designing systems so that if somebody wants their machine to be more or less than it is that that is something that is under the control of the user. I hope that is where we are heading.

MARY SCHNACKENBERG: One of the examples that I hope we can all relate to is that sitting on our kitchen bench at home is a Panasonic genius microwave. It is probably a very universal model. If you wonder around the world you will find that the majority of blind people seem to want to put braille label all over these things, but if you actually feel it very carefully you can feel the square, the pads and you don't have to label it. If it makes you feel good label it by all means, but it is not essential to label it.

That particular model has quite a number of functions which I have never used. When I want to use them they are there, but they haven't been taken away from me. No one has designed down and said, oh, Mary is never going to need those, because one day Mary will want them and when they are not there Mary will be very cross. So, you know, it is the same old machine with a whole range of options built into it.

Yes, I can agree with Dr. Jernigan too, but I guess the world has changed. It is possible to provide options, it is possible for people to switch off beeps in their motor cars now if they don't want to be beeped at every time they open the door, you can turn those things off. It is possible to do a variety of things with microprocessors.

In terms of the surveys, David, I have to agree with Kurt and Judy. Surveys will give you the answers the questioners want. The latest survey that I did in the library at home did not give me the answers I wanted at all, and I am going to have to get much more sophisticated.

The problem with the survey was that it told me that my users think the library is great. Well, that is no use to me. I happen to know that it isn't great. I know a great deal about the gaps about the service I provide and the service provided around the world from a lot of other libraries, and I intend to shape those questions to get the answers that I can use to belt my founders around the ears to give me more money to provide the services that I know my people deserves. Now, that is called manipulating a survey.

Surveys have a value but generally surveys only tell you where you are now, not where you might be if. Well, it just depends on how you set the surveys. You have to be really careful with them to make sure that they in effect do give you a vision of where you might be. But often people, unless they are exposed to choices and ranges, they might not know where they might be. And too many of our people say well it cost too much.

STEPHEN KING: I think I am not going to make myself popular here. There are two things. One is we have drifted off a little bit off the topic of consumer involvement and I think there are some important things we need to talk about, and not how well we are going to address on an international scale, getting consumer adoption and involvement. Because we have been talking here about what things are going to be done at a national level, and at the local level.

We were talking yesterday about trying to achieve a vision of interlibrary loans and some visions of international systems and if we are going to do that then we need to engage with some representative consumer organizations within the international scene. And I have got some comments I would like to make about that. I want to return to that in a second. Having got off of the track there is a couple of points I want to make. When we were talking about the design of the player, and I will call it a player, David.

As far as the work that RNIB had been doing we have been listening very carefully to consumer comments. We told you yesterday that we spent a year in the field testing and we took a particular prototype and that was not to test the prototype but to get a feed back on how people use things.

We have been using nearly all the methods that have been present here in Judith and Mary's paper, to listen to consumers. Really I just wanted to say, by way of assurance, that all the things that are being talked about here are actually here in this room in terms of the types of player that we are certainly envisioning for the future. We saw yesterday the demonstration of a very sophisticated way of looking at a structured text based on using a personal computer, it is great for a person with computer right now. Very many blind and partially sighted people have.

In Hiroshi Kawamura's bag is a prototype player which is a more traditional talking book player which looks not dissimilar to the telex machine and the Clarke and Smith machine, but addresses a lot of the issues and very many of their shortcomings, and allowed a less sophisticated access to that player.

I think in Chris Day's bag is a very small portable player which you can carry around and is of the size of a CD walkman. So in terms of the philosophy we are trying to achieve is that people can use any of those types of players using the same underlying technology, the same underlying structured files delivered potentially on a CD and through other medias. So again a caution about talking too much about players. We envisage a world of multiple different types of players which provides different types of access and provide different types of facilities, portability, or largeness and heaviness and simplicity, which are all, of course, important to different sections of the market.

So those are there and at some point at the coffee break if people wanted to talk to either Chris or Hiroshi and see the system they are there.

I wanted then to go back to involvement question. The European Blind Union at its board meeting before last came to the conclusion that they wished to engage in discussion with the producers of talking books because they are aware that some fundamental questions might be made, some fundamental decisions might be made which might influence the future over the next ten, fifteen, twenty years as far as the proceedings in Europe is concerned. They decided to set up an expert working group, and at the last board meeting an expert working group was nominated and there are some names.

For reasons best known to the European Blind Union which I haven't actually figured out yet, they have asked me to chair that group and to work towards setting up a seminar which would engage some discussions between producers and the representative consumer organizations. It occurred to me yesterday, I am not sure that the European Blind Union is actually the right forum because it is on a global level and I am just passing that comment to my colleagues in the World Blind Union as to whether we actually should be looking at something on a role like this. I personally don't get very much involved in European Blind Union or World Blind Union politics, and therefore I am not really aware. The EBU is going to be specially doing something to try to engage the producers and the consumer organization. I think that is all I want to say.

KURT CYLKE: Jaakko.

JAAKKO RAISANEN: Yes. In Finland the library serves eight thousand patrons and all patrons have Clarke and Smith compact cassette machine. But the library is giving free of charge the Clarke and Smith machine. It has been more than for twenty-five years now. The departments they buy themselves the four-track machine. And the variety is very big and they can choose from a big variety. One is choosing walkman and one is choosing a big ones and so on. There are a lot of criticism from the patrons. They like the Clarke and

Smith system because it is very handy for elderly people but they criticize them because there is only one model of Clarke and Smith, why has it hasn't fast forward or why is it not portable and so on.

In the future when it may be ten or twenty years a new system is coming the library is not taking care of the feeling of the machines. The patrons want to have a choice to purchase the machines from a commercial market. I think the commercial market is giving better service concerning machines. I heard in US you have three different modems for Philips machines, I think there is a very good variety of different type of models nowadays. I think the commercial market will find proper client aids for the blind when the visually handicapped can give information. We want to have that and that.

I think our federation is finding every year a lot of innovations and new devises for the visually handicapped only from a commercial market. The prices are surprisingly cheap compared with the close market or like Clarke and Smith. Because Clarke and Smith as a system is very good for the elderly visually handicapped, but it has done nothing for the development of for instance, the record user, no multiple model or the machine is too heavy or many many points that the patrons are criticising.

We have also been thinking in Finland if we could combine so many functions in one machine as possible and maybe there could be a multi function machine. I mean that this machine could be PC based machine with which the patron could listen to talking books, to talking magazines, electronic newspapers, make shopping, order tickets like minitel in France, and many others. Of course braille is of course compiled with that machine and many other functions. Also synthetic speech of course for electronic newspapers.

Young people are very interested in that, but in our survey the old people have responded, no, forget that it is too complicated to use. We think there will be a big variety of machines also in the future depending upon what visually handicapped people want to have, and of course in the future there will be a bigger variety of wants, demands, because commercial braille is getting more and more products that can be used also. Thank you.

KURT CYLKE: Thank you. Mr. Jernigan.

KENNETH JERNIGAN: I always come away from meetings like with new opportunities to learn again some lessons in humility feeling I might not have been as articulate as I might have the first time around.

Let me try in a briefer way to make the point I was attempting to make before. I am found of a saying which says philosophy bakes no bread but that without a philosophy no bread is baked. What we do will be determined in every aspect and in ever tiny detail by the philosophy we have, whether we know it or not or whether we mean it or not. What I think we should do is to avoid some of the problems the larger society has brought on itself.

Many times we are told that we must take into account that the larger society feels this way. I don't give a hang how the larger society feels except as I must. I am concern we do the best that we can with what we have to achieve whatever goal we believe we have, and if society at large doesn't choose to use its resources as wisely I am not sure we can save the world. And I mean by that this.

The extreme example in our country is where you take, and I was reading about this very example in a massive material that I have been reducing to an article where you have a situation, a twelve-year old boy with a mental age of just over two years is put into a regular classroom with a teacher and with thirty other students to be "educated", well, I don't think that can be done unless you don't educate the students that can be educated, or unless indeed you just let the student, the other one sit there. I understand that we are not here to talk about what the larger society does except as we try to model ourselves after it. And I don't want the libraries to do that because I think we have made a mess of education by that mistake.

I think that what we ought to do is to concentrate our resources not on the upper one percent of our readers but on those that are moderately capable and at least moderately literate and such like and that the rest will tend to move towards that standard to some extent, not all of them. And I recognize that that means that we will under serve or not serve certain groups, but I repeat that I think the alternative to that is the kind of mess that American education has allowed itself to get into where it claims to be everything to everybody, it must serve all populations, it must educate all. And we have even gone to the extent in our colleges and our university where we believe that a college degree signifies something. Well it did formerly, that is true; and so the answer to the problem of the population is, give everybody a college degree.

The trouble is when you do that is you have given nobody a college degree and you have even ruin the ones you gave. So I just say that I want to see our libraries avoid that kind of mistake and certainly if they made it don't do it in the name of consumerism or helping the consumers because you are not. Let us see if that is controversial. I don't think it will be.

KURT CYLKE: Any other comments.

CLIVE LANSINK: I would like to make a comment that perhaps hasn't been made yet with respect to a consumer involvement. I would like to really stress the difference between involvement in a passive sense and active participation.

It seems that there is a modern trend in management that any manager can sort of manage anything provided he or she knows what resources are available and has a sort of statement of needs to meet which could be backed up by some sort of surveys or whatever it might be and then simply make decisions that have tried to apply the resources to meet the needs and report at the end of the process. But there is a kind of exfactor which is often ignored which has to do with how much the net process the manager actually understands some of the nuances and the more hidden factors in the delivery of a particular service.

One way to achieve that exfactor, if it isn't already available is to encourage partnership and participation between people who are on the one side the main providers of a service and people who are on the other side the main consumers of a service, and that can only really be achieved through a process of making sure that information is properly shared and equally available to both halves of the partnership, if you like, and that there is a kind of real sense of mutual respect between the participants.

Now, just to simply go out from the point of view of management, for instance, and do some surveys, and they may be very good surveys, they may be quite valuable in terms of what they may provide in terms of information, but to not then involve some kind of organized consumer movement or group in the analysis of that information is really to ignore a whole perspective on what that survey may be telling you.

So I come to this question from the point of view of wanting to see that no matter what steps are taken to gain information about consumer needs and all those sorts of things that we have been talking about in different ways this morning, what really matters to me at the end of the day is that when a decision is actually made about the allocation of the resource to meet the given need that there has to be, in my view, a sharing of all of the data that is available between people who may be in consumer groups and who may also be on the side of the managers, the providers of the resource in any way of looking at it. There has to be that sharing of information and there has to be a kind of participation in the final decision that takes into account different ways of looking at that data.

Now, to some extent that is what we are starting to do here, but it is important to make sure that when we talk about consumer involvement, as far as I am concerned we are really talking about participation and partnership.

KURT CYLKE: I might be very naive. I know what goes on in the United States and what you have described is exactly the process that has been taken place for the last twenty-five years or much longer than that. Dr. Jernigan could speak to that. I assume that was the type of partnership that was going on around the world, but I don't know that.

Are there any other comments or questions before we take a break? This side of the room seems to be singularly silent. How about every fifth person. Well, we are right on schedule to take a break and we will sit down at the table at 10:45.

---MORNING BREAK:

KURT CYLKE: The next section discusses an international union catalog, and I hope that most of you are aware that it exists, although you are not necessarily all contributing to it or participating or using it, but let me just briefly capsulize the comments I made in the paper and see where we can go.

When the Library of Congress first started out with the talking book program some sixty-four years ago we pursued the usual cataloguing effort which are paper cards. In 1977, after forty-six years of doing cars we saw the need for microfiche and we went into that. We went into an online file in 1979 which is two years after that.

The online file has been heavily used and currently we have both access to our catalog through internet and through a CD. CD-BLND. Now what is the catalog?

The original catalog was just Library of Congress' materials but it became more and more apparent to us that being the country that we are and having the language requirements that we have that it would be useful for us to have records from other countries both English language and non English language so that we can set up an interlibrary loan system. We also thought it would be useful for the people who wished to have their records input to do so. So we undertook an effort and let me briefly discuss what the collection consist of now or what the catalog consist of and then what we have done and what we want to do.

The catalog has approximately 10,000 braille titles that we have produced; approximately 40,000 recorded titles that we have produced; approximately 18,000 English language titles that we have purchased; approximately 4,500 non English language that we have purchased, braille and audio. There are 6,500 music scores, 16,000 titles produced by our network libraries. It also includes all the records produced by the recording for the blind which is approximately 83,000 titles. Xavier Society, which is a Catholic organization in New York, 1,500 titles. Seedlings Braille Books, which is a private, not for profit organization 140 titles.

And then we get into our international group. Ireland 488 titles, CNIB and fifteen other agencies in Canada 53,671 titles, so we have a total of about 240,000 titles, this represents about 15 million copies. We currently have conversations with the South African Library for the Blind and with Mary Schnackenberg in New Zealand, and I would anticipate that New Zealand the presses will start in the immediate future. South

Africa would be a little, six months or so before that.

What is it that we are trying to do? What we are trying to do is to make one International Union Catalog of materials available to blind individuals in alternate formats accessible in one spot and this is what we have achieved so far. The offer, the invitation is for any librarian to provide to us in any form the records that they have and we will undertake all the cost to catalog, to put them in and to maintain the catalog, and if you do that you will receive one copy of the CD ROM. Or at no cost to you you can search the internet and you can find it there. Just in case you have not been using the internet or it has not been of use to you, I have included a sheet which tells you how to access it, and Judy Dixon can talk to you at greater length.

So that is the total presentation. I think we have come a long way. We have a significant number of titles in there and we would like to increase it. At the present the only constraint, actually there are two constraint. One we would like to maintain the Roman Alphabet because of the staff situation, in other words we are not into the cyrillic at this point in time.

The other thing is that the item that is listed has to be guaranteed as being available to the blind individual, that it is available either as a loan or for purchase, and it has to be a total unit, it can't be a fragment of a book or a magazine article, it would have to be a total issue, a total run a total item; and with that at some expense to you because you would have to transmit it to us. Obviously we prefer to read these things in machine readable form, but if they come in on handwritten cards we will take them.

I think in the case of Ireland that is what we would be doing, of course we are dealing with a significantly smaller number of items. So whether it be Netherlands, whether it be Denmark, whatever country, if you are willing to put in the titles you have access to it. We haven't been out feeding the bushes because as you can see we have been fairly successful, we have enough work going along, but with only two libraries in the cubes, New Zealand and South Africa, we are open to others.

Now, we did have conversations with Australia and they are I guess some technical convolutions.

ROSEMARY KAVANAGH: Kurt, I would like to comment on how we make use of that because I really think that that is a very useful tool. For instance the CD ROM copy that we have is on our CD ROM network and what we hope to do, and later on today you will see a demonstration of our online public access catalog that we hope to make available later this year, and we hope to be able to interface that with the catalog so that our users first of all search our own holdings here for the most current stuff, but at the same time and within the same search session be able to flip over to the CD ROM network and locate items in other parts of the world. And it is an advantage to us because we work very closely as you may imagine with the United States.

What we would like to see happen later on, and I am hoping that Geac Canada today will be able to demonstrate it. They have a package called Geopack and in that it is a feature whereby you can simply add the databases electronically of any other libraries of any other part of the world and it becomes part of the immediate search session, and so the more of those international catalog that are set up the more access to information our users will have independently and privately because we hope to design it so that it is user friendly.

So it has been extremely valuable for us and as we see more and more opportunities to work with other countries because we have a lot of immigrants who live here and who are aging and who need access as well to alternate format materials in the language that they are comfortable in. We see that that is going to become an even more useful tool if we can work out some of the inter-lending requirements or procedures to make it happen quickly and effectively.

So I want to say that it certainly has been very very useful for us and we see it as being even more useful when we are able to turn it over so that our users can use it electronically.

STEPHEN KING: I have a brief comment to say. Now that we have managed to weed out our records down from about 56,000 down to a more manageable quantity weeding out those ones that aren't available.

KURT CYLKE: We did contact you on a couple of occasions.

STEPHEN KING: Yes. And we have been trying to get our housekeeping in order so that we could give you some good records of things that really are available for loan so hopefully by the end of this year.

KURT CYLKE: Well, again it is more of an announcement than a discussion, but if there is anybody who wishes to participate, please feel free, you know the world will benefit hopefully from your participation.

STEPHEN KING: Those will be the partnership from RNIB but all the other agencies in the UK as well.

EUCLID HERIE: You don't suppose there will be duplication.

KURT CYLKE: No, you cite the fact that they are available.

ROSEMARY KAVANAGH: But the title is counted once.

EUCLID HERIE: Oh, it is only counted once?

KURT CYLKE: Yes.

EUCLID HERIE: Well, that was my question.

KURT CYLKE: Identification to the fact that they are available.

MARY SCHNACKENBERG: If there are different issues of it.

ROSEMARY KAVANAGH: That is right.

KURT CYLKE: Yes, if there are two. There is an NLS new issue in front of you and the only reason I sent it out is it lays out the MARC format in the open forum and also describes the process. I don't think it is worth going into in a great detail but you can read it there.

EUCLID HERIE: I have one question. Other than your music collections how many others do you have? Do you have CNIB or some other music collection, or is yours the only one?

KURT CYLKE: In the catalog?

EUCLID HERIE: Yes.

KURT CYLKE: I believe the only one is ours.

ROSEMARY KAVANAGH: Yes, I don't think ours is there.

KURT CYLKE: I am not opposed to putting others in.

EUCLID HERIE: Well, that is what I wondered.

ROSEMARY KAVANAGH: We are still trying to organize ours, Euclid so that we can include it there.

EUCLID HERIE: That is fine. I just wanted to know.

KURT CYLKE: Any question or comment? Okay, the next thing again is an announcement type of thing but it perhaps may generate more conversation.

We deal as CNIB does in net multiple languages, as a matter of fact we have a need for eighty languages, the primary ones of course being English, Spanish, French, German, Polish, Russian, I think they stand in order. And then there are seventy plus others that we deal with. Everybody in this room, of course, plus. So we set out to buy books across the world, and if you have attended meetings of IFLA you will see representatives, our representatives there, they are making contact and so forth. The person on our staff Jim Hernanden, we have a person specifically identified to do that purchase.

At the same time we set up an arrangement to sell titles to those people who have received copyright clearance and who wish to purchase titles for their collection. We sell very heavily to Canada. I guess that would be our largest purchaser. South Africa, Australia for a period of time, more or less as time go back.

Basically all I am saying is that you have in your hands a sample of a contract that we would enter into with you if you wish to purchase our books and a list of requirements that must be met if indeed you wish to enter into that contract. And again this is more of an informational piece.

I know one of the prime areas of concern has been the area of copyright, and I know one of the people who have been concerned about that the most I guess is Mary Schnackenberg. She has visited us on several occasions and talked about it, and I know she has talked to others recently and not so recently in the room about it, and that is an area which has to be addressed where the books have to be cleared before we can enter into an arrangement. Because our books are cleared for use by residents of the US or citizens living abroad and in many cases for Canada.

ROSEMARY KAVANAGH: I do have a comment on that. When I was in Malaysia a number of people there approached us about being able to get copies of the stuff that we produced, and I came back and I checked around and tried to find out what would be the best way to expedite that politically and to the comfort of our CAN copy colleagues or copyright agreements with the publishers, and the feedback I got, not officially or whatever, was that they were a bit leery about allowing us to clear copyright for those countries because they were concerned that in Asia there seem to be a tendency to copy things quite freely, and so that was a concern that also made us a bit apprehensive. Nothing came out of it, it has gone no further, but that is a concern that we would have if we were being asked to clear it for them. We would prefer to actually have them make those arrangements themselves, but it didn't seem very promising at all.

MARY SCHNACKENBERG: Yes. In terms of clearing copyright, there is no question that the intellectual property of the author must be protected, and that whatever steps are taken the citizens and the country of origin also have rights to protection. I guess what we want to try and look towards is whether there are any streamlining of the process which can be made which still enshrine the appropriate protections that are required.

It has got to the point now where we actually haven't bought any titles from the Library of Congress for about three years now because of the impediments to clearing copyright. And these are process matters. They are not matters of will or goodwill or lack of goodwill, they are process issues, and it is possible that you know we can raise these process issues and see if there are ways of amending the process and yet protect the interest that must be protected.

KURT CYLKE: You mean you haven't cleared a book for copyright in three years?

MARY SCHNACKENBERG: The copyright clearances have been undertaken for Australia and New Zealand by one of the three agencies involved. We have a three way agreement, it is a cost sharing agreement, and the Royal Blind Society in Sidney has been looking after Library of Congress titles. Royal Victorian Institute of the Blind has been looking after CNIB titles and I look after titles for the Royal National Institute for the Blind. Two of the three of us have been successful in clearing titles. We clear for the RNIB and CNIB produced titles. The difficulties have been with clearing the Library of Congress titles and to the best of my understanding it has been nearly three years since we had our last try.

One of our other difficulties, which is quite separate from copyright, for a time we were receiving masters that were less than satisfactory. However, the Library of Congress has turned that around and that stopped being an issue, so we are left with the issue of seeing if we can adjust the process and still protect the intellectual property interests and the consumer interest in the United States.

KURT CYLKE: I guess there is a language problem. You said it has been three years that you have last tried? Does that mean the last attempt that you made to clear or the last successful book you purchased.

MARY SCHNACKENBERG: Last purchase.

KURT CYLKE: Let me ask the question again. It has nothing to do with the Library of Congress?

MARY SCHNACKENBERG: No.

KURT CYLKE: You attempted to go out and get copyright clearance for books?

MARY SCHNACKENBERG: Yes.

KURT CYLKE: And you haven't gotten one in three years?

ROSEMARY KAVANAGH: She hasn't asked in three years.

MARY SCHNACKENBERG: No. We haven't asked in three years because of the difficulty of clearing.

KURT CYLKE: Okay.

MARY SCHNACKENBERG: The difficulty of obtaining copyright from the publisher so that we can prove that we have the correct copyright and that we are not invading anyone's intellectual rights has got so out of hand that we have given up.

KURT CYLKE: How long was the process before that?

MARY SCHNACKENBERG: Anything between six months and two years.

KURT CYLKE: Typical for the United States also. But we didn't give up though. I suggest if you don't ask you don't get, so if you haven't ask for three years.

MARY SCHNACKENBERG: But by the time we receive the copyrights in a number of cases the masters were no long available for copying.

KURT CYLKE: Okay. Well, we can get into this after. That was what was told to me and of course they are, but that is an internal matter. I would urge you to clear the copyright, I would urge you not to be distressed about a six month wait sometimes because that is not an abnormal situation, and I will take care of the other matter with the producers.

MARY SCHNACKENBERG: Thank you.

ROSEMARY KAVANAGH: Maybe it is a good idea, just as a suggestion, to clear it in advance anyways.

KURT CYLKE: Okay. Are there any other questions about buying or selling or anything of that sort, or the catalog? Okay. Then at this point let me turn the meeting back over to John Cookson.

JOHN COOKSON: I very much appreciated some of the background and contact setting and philosophy that we have had the benefit of from some of the participants here who have had a great deal of experience in the library service. Now I propose to shift gears in a sense to perhaps consider some very practical, not that the philosophy is not practical but some, shall we say, nuts and bolts technical considerations and by way of metaphor I will symbolize that by taking off my coat, rolling up my sleeve, I will take off my vest.

The last time I did this people said, Oh, my God, and it isn't even lunch yet. Yesterday I asked that you would, please, consider some issues, and one of them is; What are your expectations for this gathering? What do you want to get out of it? What do we want to walk away with from here?

One of the things that has emerged, I think, from our talk is that future products will be very much software based and if they are software based, softwares are typically partitioned into components or programs or separate teams and these kinds of things are amenable to development independent of geography. Some of those issues might include coding options and methods for variable rate playback, coding of audio itself, indexing schemes, user interface schemes, and international library loan. I think maybe there is the opportunity to share resources in our research, in our development, in our exploration of all the various ways that we can realize some of these requirements.

One of the things that I suggested that we might do is establish close -- well, I will put it in very simple terms. What I want to walk away with from here is a commitment for collaborative research, that is what I want to see. I want to see someone or some organization that has undertaken to sponsor a listserve in the internet that I can use that we can all use and share our research results, that we can make proposals. I would even extend that to the notion that if some of us want to experiment with the Daisy talking book system, then typically when one distributes software, one makes a commitment to support it, and that is very often done through electronic means. No software system is without bugs and so when the users find them they have somebody to ask and so on. So I think that would be a piece of the electronic communication.

For example in our laboratory I am engaged in experimenting with coding schemes and we have done some experiments and I can explain them to you, but we will have more confidence in our results if I was able to ask you to perhaps repeat the same experiment or ask you what your results are or share those with you.

What I would like to walk away with from here is a commitment to do that, or maybe you are not interested, I don't know. But to me that seems like one of the benefits, one of the outcomes that would make me feel like it has been a really productive experience here and we have got something on the record and that we are going to build on.

I guess it is always dangerous to ask for volunteers in an open forum like this, but if there is anyone who is particularly excited about hosting a communications mechanism, namely a listserve let them speak out.

Well, oh, Clive. Thank you. Now, do you want to know what your responsibilities are? Are you volunteering?

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CLIVE LANSINK: I was speaking up.

JOHN COOKSON: Oh, you are not volunteering.

CLIVE LANSINK: Well, I would like to speak anyway.

JOHN COOKSON: Okay. Judy has the microphone.

CLIVE LANSINK: I agree, John, that we should have some commitment to sharing of information. It goes along with what I was saying before, collaborative research, the ability to experiment in different countries and perhaps compare results across geographical boundaries.

There is no doubt in my mind that perhaps the best and most applicable method of doing this, in fact it is almost tailor made for this particular kind of problem that we are discussing is to make use of the internet, because essentially the sorts of things that we are modelling can be easily modelled on an average PC with the appropriate sound equipment plugged into it, and then it is just software after that. And software can be transferred around the world in seconds; this is of course being done widely.

I think the kind of offer I would like to make from the point of view of the Foundation for the Blind in New Zealand, is that we do have a host which is running twenty-four hours a day, it would be an easy matter for us to set up a listserve. We would probably not be able to spend a lot of personal time in moderating it or anything like that, but certainly if it is a question of providing some space and a certain guarantee of being able to store and retrieve information and have access to it twenty-four house a day via the internet, then I think that is an offer that we can certainly make.

JOHN COOKSON: Well, I think that is fantastic and exciting. So we now have a host. Perhaps we should spend just a moment discussing what the shape of our communications experience will be. I have some suggestions to throw on the table for comment.

I suggest first of all it be an open listserve, that means that anybody in the world is allowed to sign up for it, and that we have two types of membership. If it is not open then there is always the opportunity to offend somebody by denying them access, so that is probably worth avoiding. So we could perhaps petition membership between our contributors and observers.

Our contributors are people who are allowed to post messages or information on to the list. Observers only listen or are sent the messages that are posted. However they are allowed to post the message or comments on say a period basis monthly or quarterly or whatever, but there is no control over whether they do this or not. It is just kind of a be polite protocol kind of thing.

As the moderator or the host it would be incumbent on you to draft some sort of welcome message to new members that would summarize what types of topics that are appropriate for this list.

JUDITH DIXON: John, I wonder if we ought not to even put a few sentences together between now and tomorrow noon so that people have an opportunity to provide input on what the purpose is.

JOHN COOKSON: Okay. Who would like to volunteer or suggest? I would be pleased to put a few lines on paper that would suggest. I am not a listserve expert so I don't know exactly how you do this, but you probably would want to approach people who -- I guess it is typically the subscriber who is responsible for removing themselves if they have no longer any interest and so on.

JUDITH DIXON: That is right. The listserve manager or the subscriber can remove the individual. Typically, John, the listserve manager or the subscriber can remove the person. If the listserve manager has some reason or if the person is being ill behaved or for some reason that you want them removed you can remove them and you can declare their address not one that is allowed to automatically subscribe.

JOHN COOKSON: Okay.

CLIVE LANSINK: I wonder if I can just make an observation. It seems to me that in the past five minutes we have gone very quickly into a particular use of terminology and we are starting really a conversation about it a making a listserve and so on, and it occurs to me what we really should perhaps clarify here is the level of interest in participating in a global mechanism of sharing information with perhaps not quite so much thought for the specifics of the terminology, but more just concentrating on the ability to send messages through the group to other people.

JUDITH DIXON: Clive I don't know if everybody knows what a listserve is.

CLIVE LANSINK: Okay, does everybody know what a list serve is?

JOHN COOKSON: I think that before we leave here we would certainly want the internet address. If you don't have an internet address then you probably don't know what a listserve is. So, we would want everyone internet address before they leave here, so that is probably something we would want to pass around.

CLIVE LANSINK: But are we dealing with a group of people who are up with the play on this particulAr way of sharing information?

JOHN COOKSON: Perhaps not. That may be. But the people here certainly have within their organization, I would think people who would have an interest, who have the technical expertise to participate.

JOHN GRIFFITHS: I think you have got to call interested parties, or Clive has, and then those interested people will be able to provide the information that is required.

JOHN COOKSON: So what are you suggesting, John?

JOHN GRIFFITHS: I think if Clive is to be the host he has got to decide how he is going to organize the initial interested parties either right here he calls for each of us to nominate people to him, or for him to send out some sort of a proforma which people can respond to.

KURT CYLKE: I find myself in another world. I think I hear John talking to Clive and no one in the room gives a darn about what they are talking about. I mean there would be no way for me to know that until you became animated. I would suggest that a conversation ensue or we just pass it on. I mean this is what happens in meetings like this. If you are interest to have a conversation we will do it. I mean, for example the question is how many people who has an address? He asked it before and nobody indicated they had one. I mean wake up everybody is what I am saying to you. Go ahead, John.

JOHN COOKSON: Actually in many cases I would envision the actual user of this proposed communication link to not be the people in this room, except for myself, of course I would have a direct and Lars and Clive, but I think within RNIB, well John will too. But there may be within other organizations not the people who would be the actual participants.

All right, so it is a fait accompli. How about if we write, Clive, and propose a welcome message that will embody the protocol and the topics and distribute for comments later today or tomorrow, and then we will solicit everyone's address and start from there.

ROSEMARY KAVANAGH: I just have a comment on one part of the structure that you propose. I still think we could use the opportunity for wider communication beyond just the people who are technical. I am not comfortable with structuring it into the once a month communicators and on a regular basis communicators. I think if we are all aware of the listserve, the internet address and so forth and the rest of us who may not necessarily be a technical person have something to add or regularly wants to visit to see what the discussion looks like, we should be able to do that at any time. I am not necessarily going to sit back and remember to do it once a month or once every three months or whatever. So I think we should look at using it for even broader communication, just that you can keep the dialogue going with this group and sort of address some of what Stephen King mentioned earlier about taking it into the global forum rather than narrowing it down to a few.

JOHN COOKSON: We have to formulate some general guidelines. But perhaps the guidelines would be that everyone here is a participant, but you know there are about ten million computers on the internet and there are a lot of other interested parties in this kind of technology, although we probably don't want them cluttering the communications.

ROSEMARY KAVANAGH: Understood. But you have got a group here.

JUDITH DIXON: I mean the other way to approach this is to wait until it becomes a problem before you decide it is a problem. And the other way to approach this is to say, well, fine we are going to have listserve that is going to talk about digital talking book technology, and then come one come all, and then if it gets to be a problem where people are engaging in irrelevant conversations or making their points umpteenth times or whatever misbehaviour people may choose to do, then impose some structure.

JOHN COOKSON: Okay.

ROSEMARY KAVANAGH: I think you have another problem. Having decided on the communication mechanism I think we need to focus on what it is are the topics we can cooperate on and that might need a little bit more structuring than we have here.

JUDITH DIXON: That is what we are going to draft and discuss tomorrow, perhaps.

JOHN COOKSON: Well, we can explore some of those. I think one of the things that I am not sure a listserve will allow you to do, I think we might want to exchange some very large audio files, and we can't do that.

JUDITH DIXON: No, you can't do that on a listserve.

JOHN COOKSON: So we have to have some kind of an anonymous FTP site that would allow you to do that. If we are talking an entire book, if you did want to move an entire book in some kind of coded fashion around the world you do need a fairly capable FTP site. So, you know, to exchange any substantial data set is another issue. I know that LC has got some anonymous FTP that I can explore. I don't know how much space is available there.

CLIVE LANSINK: Well, we have got some space for that.

JOHN COOKSON: 300 megabytes?

CLIVE LANSINK: That might be pushing it.

JUDY DIXON: Yes, we don't have that much space, John. Right now we only have available to us about 500K. We could probably get it expanded, but I doubt whether we can get it expanded that much.

JOHN COOKSON: This may very well be the kind of topic that can be explored through this communication mechanism. The moderator could say; I have got an audio files, who has got 300 megabits put it up on a FTP site, you know and we can determine dynamically. One day you might try it and your system administrator would say, that's it no more of that. And so you move it to some other site. All right, then let us pursue that. It seems like we do have consensus that this is a valuable product of this meeting.

I could suggest some of the things that might be shared, for example we recently did some study on coding techniques and the coding technique that we explored is the so called MPEG 1 level 3 and we conducted tests where we coded material, encoded it and we presented it to users. We coded it at various levels of compression or various levels of data reduction, then played it back.

We structured the test as a so called ABX test where one hears the original material on channel A and then one hears the coded material on channel B and then one is allowed to select seemlessly between A and B and then X is the third channel that the computer selects in a random fashion to be either A or B and it is the listener's task to identify X, is it A or B. In this fashion you are able to determine with some statistical reliability whether there is indeed a detectable difference between the coded and the original. The original is, for a point of reference, the original is CD quality audio, 706K bits per second. And we coded it down to 32K, and 40 and 48 and 56.

This kind of listening is expensive because in the ideal it is serial where you -- any kind of listening test one can take exception to because there are so many variables that are difficult to control.

How old was the subject? How good was their hearing? Were they male or female? Were they regular listeners to talking books or not? All these things might have a bearing on their ability to distinguish between the coded and the encoded.

Ideally you do this with high quality head phones in a very quiet environment and you allow the user control over the system and then the user has to record their responses, if they are not sighted then you have -- typically these kinds of tests are structure for people who write down responses, but if you are not sighted then that poses an additional challenge. So we did this test but the range of subjects was quite limited because it takes a long time to do this and we did it in a room such as this with loud speakers.

You can certainly take exception to that because depending on where you are siting in the room the acoustic response will vary. So let us say I conduct this test and then provide you with the software to do the similar test and use this communication mechanism and suggest that you might want to try it in your own environment and so that then we can collaborate on the results and see whether there is a consensus and in this way this will give us more original data to work with so we could have more confidence in the outcome.

This is an example of the kind of thing that I view as collaborative research or cooperative investigation that is best done through this kind of an electronic medium.

LYNN LEITH: Excuse me, John, I have a couple of comments I wanted to make about this study. One is I agree that the setting was not ideal by any stretch with it being in an open area with the speakers louder than the headphone. But I wonder if the issue is not so much what is distinguishable in relation to the comparison but what is acceptable.

I mean you can distinguish the difference at 32 or 40K because it is distinguishable does that mean it is not acceptable?

JOHN COOKSON: Acceptability is something that is really hard to get your hands on, because that is a very subjective assessment, but whether you can tell the difference or not is quite objective. I mean we can measure that. We had statistician that would tell us whether if you can do it on a repeated basis how many times you have to be able to do it to make it statistically significant and reliable and so on. It is a much more solid measure I think. The idea is if you cannot tell the difference between CD quality, full bandwidth, full fidelity and some other corrupted version then you might as well use -- I should say corrupted, but one that has gone through a data reduction algorithm, perceptual coding algorithm then you might as well use that one.

Did you have some further comment.

LYNN LEITH: No.

JOHN COOKSON: That also raises another interesting question regarding coding that I think we touched on yesterday perhaps. But if you code things using one particular coding algorithm and suddenly the world decides there is a different standard or let us say in your particular context you can afford MPEG 2 chips and you are a player but you can afford ADPCM rendition, but our collection is in MPEG 2 then, you know. But there are ways to manage this I think, and these are the kinds of discussions I think would benefit by rapid electronic communications, and you can talk about it all you want. If we send you a file that is coded in such a way and you can't figure out what it is all about, but when you do figure out, you have more confidence that this kind of a loan or this kind of an exchange is practical. And we would be able to test concepts like recoding, we really don't know, nobody really does this sort of thing because it is not a matter of concern.

If we were to deeply data reduce some audio file and your particular player or your particular protocol does not accommodate that type of coding we would send you the coded file plus the software to decode it and then you code it in your algorithm and play it back, there may be some very strange artifax that emerge. These kinds of things are not typically tested because there is no reason to do so. But it wouldn't surprise me that there would be some peculiar distortions or artifax that emerge from this sort of thing. This is another area that we can pursue, investigate and test.

DAVID MANN: I say this quite sincerely with the greatest of respect, but a number of the issues surrounding the future of audio technology for blind people are far too important to leave that to the engineers. It is very important that we have this sort of exchange of information that we all sign up to over the last quarter of an hour, but if it is only a discussion on the relative merits of MPEG 1 and MPEG 2, then frankly it will mean as much to some people as the base ball results mean to me.

And so while this level of exchange technical exchange can be very valuable it has also got to be set in the context of what policy decisions providers are going to make, what demands consumers are going to make on those providers, so as well as setting up as an outcome of this conference better machinery for constant exchange of technical information, engineering information we need to set up structures for exchange or for analysis of this information, what it means to the different players in the field, and I use players in the other sense of the word. And as I say some way of reporting what decisions people are taking when people are moving into digital recording, when people decide to supply an alternative piece of equipment and so on.

So, I hope that we wouldn't only go away today, valuable as it is, or tomorrow with agreement on the exchange of files, because we could end up having a wonderful time over the next ten years deciding which particular form of encodement is ideal and not actually move forward on the issues at all. As I say I do mean this without any sense of impertinence, but I think we have to set everything in perspective. Thank you.

MARY SCHNACKENBERG: I would not want to comment one way or the other about that except to say as a non technical manager there are several areas of concern, let us forget the player machine. At the beginning we have talked about the need for exchange of files and if coding or types of coding becomes become as complex as international copyright then you know I have got a few fears there. But I have another quite separate question to ask which relates to the acoustic environment in which digital recordings are made. My understanding and my ears tell me that the sound for a digital environment is very much quieter than in an analogue environment, and my question is are we going to be required to develop studios of a higher quality, will our future studios be far more intolerant of variations than the present analogue studios are now?

RICHARD TUCKER: If I can just say, we do digital recording and there is no change in the studio's acoustic from an analogue to a digital and you could not tell the difference in results.

JOHN GRIFFITHS: In our experience is the same, we found no variation.

ROSEMARY KAVANAGH: We haven't had any problems either.

RICHARD TUCKER: Now the microphone has come down here, can I ask John or put a general question on the table? While exchange of technical information and reports is extremely useful, I think I was getting the feeling from Mary that she was asking for other types of information to be exchanged, and my question is why can it not even have a bulletin board like function? I don't know if any of you do check the bulletin boards. I realize talking to Judith yesterday that I am missing a couple of good ones, but I do check every day on the compuserve board, it is like a soap in a sense, it gets quite exciting at times.

The ability to drop a comment in, get an answer back for this type of concern where you have a single subject identified, the ability to go on the board and say, I am thinking of doing this, has anybody done anything about it? Does anybody know who has written about this? Collective responses can be so fruitful and save so much time, particularly if you know that your compatriots in the ring are all equally checking on it every day or two, it doesn't matter. That level of exchange the ability to say, oh, somebody has already done something on this, I will send you this, by fax even or I will put it in the post to you can prohibit or reduce the matter of invention of wheels.

We are, in this particular time of change, we are in danger of doing things that have already been done, or somebody else is already doing. I think electronic information exchange can be a really fast way of at least reducing that list. Thank you.

CLIVE LANSINK: I certainly see it as the bringing together of a community of interest and there may be a need, I guess to separate out very specific sub topics that may get technical, but I would certainly perceive the need for as broad a communication as possible. The use of a system like this is not technical. A lot of people are doing it already.

We have examples, I guess the most recent example to my mind in a field that is not too distantly unrelated from this is the discussion on the unified braille code and the number of people that are involved either formally or informally in that process using the internet. This is not something that can only be perceived as technical for buffoons to use.

Although, of course for people who are doing their backroom kind of work the ability to be able to exchange technical information and files would be very very useful. The ability for people who aren't quite so close to the backroom activities, the ability for those people to also be involve in just exchanging information, asking questions, letting each other know what is going on and so on I think will also be useful and as far as I am concern shouldn't be forgotten.

STEPHEN KING: I am going to try and shout again, because the microphone is all the way up there. What I was going to hope to do is convert some of this discussion into a bit of action perhaps. I have been writing down on my pad here some of the things we have agreed need to be done. I have written down some countries down the side, and it appeared to me that what we might want to do is we have got a number of project areas where we need to make progress and it appears to me that we need to have at least a moderator responsible for sort of each area of those discussions. The role New Zealand Society has taken responsibility for organizing a listserve that is what I am suggesting is. They have taken on the responsibility but we will all be participating in that and it appeared to me that New Zealand might take on that and also perhaps moderate some discussion on getting consumer involvement and commitment.

We heard earlier on about how important it is to check what are the activities that are going on in other European Union funded projects and it appear to me that our colleagues from the Netherlands might undertake to dig that out and post that onto the listserve under another set of headings and so that might stimulate a pile of information coming out.

Then we have talked about saying, well we have got to look at the ergonomics of how we present information, and to people in this structured manner, what are the better ways. Now, our colleagues from Sweden got themselves deeply involved in that, having developed the tool and it would appear to me that they might want to moderate that and join together some other people, because they have already distributed some platforms, you know, to start to get some information coming back on that.

John you have been talking about in the US about some sound quality issues of different compression techniques and what have you, or perhaps you should take responsibility for that as far as the US is concerned and promoting information on that.

The UK and Japan have been getting themselves involved in player development and players and perhaps we should take responsibility for posting information.

Canada has got out of it quite lightly at the moment. I have written against Canada different lending systems that might be potentials. So these are the sort of headings that we have said we need to make more progress under and it appeared to me that if we agree to these sort of project areas we should have one of the groups in this room take responsibility for starting the process off, moderating the listserve and making sure that the information is flowing between us, and keeping people in contact.

Does anybody want to volunteer for anything else? Or does anybody I have volunteered want to give up.

KURT CYLKE: Let me make a comment. I think the idea of doing that is great, but I don't know that excepting, and no offence Hiroshi, saying the responsibility for developing a player should come from Japan when they are in the very big problem. And there may be other countries that you identify in your list as problems. You talked about consumers, and I wonder what that all meant. I understand the word consumer will take responsibility for, but I don't know what that meant. So maybe this afternoon or after you do your demonstration this afternoon we might want to modify it.

STEPHEN KING: We were not talking so much about taking responsibility for only doing the activity, but what I was suggesting was taking the responsibility for making sure information is out there and finding out who else was involved and getting them involved. So it is not the responsibility for actually doing it all.

KURT CYLKE: I understand. I am not saying, in fact I am trying not to say what I am thinking, or I am trying to say it as nicely. What I am trying to say is I think you should give a lot more concern to the individual countries that you are identifying together with the topics and not come to a group thinking thing here. I mean you know the phrase, everybody comes to a meeting, we all nod our heads even though we all have reservations and then we all go up and do something which is dramatically opposed to what we want to do.

JOHN COOKSON: I think one of the realities of the information explosion is that not everybody can know everything. So, sometimes it is helpful to ---

KURT CYLKE: But it would be useful for people who know something to do something about it. Not to identify people who don't know.

JUDITH DIXON: I wonder, it has been my experience with the listserve, though is that this kind of thing naturally evolves and the people who know the most and are doing the most are the ones who say the most and get the information out there.

KURT CYLKE: My observation, Judy, is that is not necessarily the case. We have a lot of people who don't know anything and communicate a great deal and has a significant amount of loose information.

JUDITH DIXON: Kurt, every time that they communicate something that they don't know there are 73 people who would get up and say, that is wrong, in our area we are doing it this way.

I mean there are plenty of people in the room who will tell you you are wrong.

MARY SCHNACKENERG: Do you use that?

KURT CYLKE: We do. Not personally because of the problem that you just identified. My latest experience which drove me crazy was a man who wanted to identify a new MARC format for the cataloguing of books for the blind and physically handicapped, and ended up with thirty people agreeing with him and they found that it had been done thirty years ago. So you know you get a great frustration.

ROSEMARY KAVANAGH: But you are better off knowing about it Kurt.

STEPHEN KING: It is far better getting it out in the open.

ROSEMARY KAVANAGH: What if you suddenly discovered they had it.

KURT CYLKE: That is fine. They are not going to catalogue it.

RICHARD TUCKER: But if you take Stephen's point about what we are being asked to do isn't to be the font of wisdom but to try and show that information is exchanged, questions are asked, important news come to light to ensure that they are distributed, then certainly what we have been asked to do wouldn't make any claim to be the one in the know telling people who weren't in the know, simply that we have a mechanism for ensuring that reports come to us and then get distributed around. And that questions get fed back to other sources within the European unit.

KURT CYLKE: The only point I was trying to make was that I had no objection to the topics that you identified, I was having some concerns about the countries that you were identifying attached to those topics, as to whether those terms are rational.

STEPHEN KING: What I was to a certain extent trying to match was a country to a currently active doing things from what we see round the room.

KURT CYLKE: That is exactly what I am saying, and I don't think you have done that. In some cases. I don't want to get into a personal argument here at the table but when I heard these things I didn't hear that the countries that you were identifying in some cases were doing anything and yet they were given responsibilities to communicate, and I became concerned.

ROSEMARY KAVANAGH: We are only information marshalling is what I understand. I have a concern about that because I can see us being productive and not being productive, but we are all assembled here for a purpose and I still haven't heard as yet what John alluded to earlier, what do we expect get out of it and, therefore, if we can identify what we expect of meeting like this periodically, we can identify the things that we can work on.

KURT CYLKE: The other thing is that there are other venues. I mean you have the European group, you have the IFLA group, you have other existing groups that can do this. This meeting here is an accidental occurrence. I mean this is not necessarily the purpose of what, excuse me, was not the purpose for the meeting, but it is not wrong to turn it into that, but you don't want to just turn it into another something. I mean there is absolutely zero attempt to bring in people who knew about the world here.

Everybody here with the exception of a couple were self invited, that is not bad because that means they were interested, but there is the whole world out there who doesn't know about the meeting. I mean we never announced it, so there is a whole world out there. Maybe that is not our role, maybe that is the IFLA role, maybe that is the European role, maybe that is the World Blind Union role. I honestly don't think that is this group's role. It makes me very nervous about that.

SUSANNE SEIDELIN: I am a bit concerned about what we are doing right now. Are we going to build a new organization? I would say, no. There are lots of organization out there. For example IFLA, the sections for the libraries of the blind, there are other meetings, the European Blind Union, the World Blind Union and everybody is working towards the same thing, and if we begin to share information and do surveys among ourselves we are doing wrong, because it was not what I came for. I came to share information, to get information, but for the same purpose as the purpose in the other organizations. So I think it is very productive if we can do something from this meeting and it is not just another meeting. Because that is even more frustrating.

On the other hand I don't think we should start things which other organizations do as well as we can do it, because all of us here are also members in other organizations. We meet in other connections and that is fine. I think we should be aware that we are not going to open a new forum which are going to meet regularly and have magazines send out and information send out, which does not mean that I don't agree with you that we should share the information. A lot of questions you raised before was extremely important as to the technical issues. I just want to say I am a bit frustrated right now.

KURT CYLKE: I totally agree with you.

Everything you said I don't disagree with one single word. I think it will be very productive, many of you and we hold a general membership and are active in IFLA. If IFLA wanted to take on that responsibility which is a world group I think that is super, I think they should, or the World Blind Union probably more than the European group because they are broader.

SUSANNE SEIDELIN: I would say both of them, because we have to work together, both the user organization and the libraries.

ROSEMARY KAVANAGH: But I still think there is a fundamental problem, or if there isn't a fundamental problem then you seriously have to ask, why are we here? Because all of us belong to different organizations and those different organizations have different purposes, yet I know from working with Kurt in terms of setting it up he is absolutely right. Very very many people called us when they heard that this was happening and they wanted to be here. We had to answer the question why do they want to be here? Because everybody perceives there is a problem and if it was being resolved in all of those organizations many people wouldn't ask to be here to discuss the issue. So I still think that although we may go back to our separate organizations and I am sure that not all of us belong to

IFLA we are still going to leave with the same problem.

KURT CYLKE: I say that almost all the people that I can look around, I mean we have got the Netherlands, and you have got Denmark and you have got the UK and you have got the US, Australia, they are all IFLA participants, and that is what that IFLA group was founded for.

Euclid said earlier, that he wanted to put a questionnaire out and ask people if they were satisfied and what did they think of the meeting. I said no, because I don't care. I mean to be very honest with you the meeting was set for the fellow Stephen King and for Kurt Cylke to have their staff talk to each other and to see what they were up to and to see if either one of us was doing something bizarre. I have determined that they are not and I hope he has determined that we are not and so the meeting is a hundred percent successful.

Now, what the rest of you guys are here for I don't know and I hope you enjoyed it and I hope you have the benefit of all of that but I think there are other venues for that. As a matter of fact I think Stephen can validate this, just a few minutes ago I said this very thing to him and said, you know I don't want to have it as a continuing meeting or whatever. The next time we get together a couple of years from now because it is appropriate for us and people want to come then that is fine. But it is a different thing. And I regret one international group that I set up and I certainly sure as hell don't want to set up a second. I mean because the first one hasn't worked out at all the way I thought it would, and I don't want to be responsible. So, I mean if there is anything clear here, when we go home I think we go home, and then work, as you point out, through the IFLA group, through the World Blind Union to achieve exactly what John is talking about achieving, but don't use this as a entity.

SUSANNE SEIDELIN: And work through personal contact.

KURT CYLKE: And through personal contact. John, I am not trying to negate what you are doing here with New Zealand and having that set up.

CLIVE LANSINK: What we are talking about is an opportunity for people with a similar interest to meet. I don't know that anyone has really come to this with the idea of anything more formal than that. It is clearly a topic that interest other people.

KURT CYLKE: I would urge you then individually and collectively or however to put it on the program at the next IFLA meeting. Or the next IFLA meeting you can get it on the program and encourage the

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people to go to that venue to talk about it.

CLIVE LANSINK: In terms of why we are here I can tell you why I am here. I am here just to find out what is going on, it is as simple as that.

INGAR BECKMAN HIRSCHFELDT: Kurt, this is Ingar from Sweden. I become rather upset of what you were saying. I think that we all came here together as a start point to see what is the new media for audio books. I don't think that is the business between Britain and the United States.

We were happy that we were invited from Sweden to present our research around Daisy. We prepared ourselves very cautiously and we met with the other Scandinavian countries and with the Netherlands and with the UK and we have really prepared for this meeting. If this was a great mistake from us I feel this is really a waste of time if it is just that we are watchers on a meeting when Stephen and Kurt is discussing a new machine or what it was.

KURT CYLKE: I don't agree with you. Unfortunately what you are upset about and you shouldn't be upset, it was a meeting just as I described it. The fact that you and others turned it into something else. I mean it doesn't bother me, I mean I like you all that is fine, welcome, but it wasn't a meeting to discuss

Daisy. I think we all benefitted from it, but maybe when everybody got together it would have been much better to have it in the IFLA environment where you can have a broader audience. What I am saying and I understand these are not politically correct statements, I am not known for that, but I would like to express it as I perceive it.

INGAR BECKMAN HIRSCHFELDT: Well why are you then calling it third international meeting to discuss audio technology?

KURT CYLKE: Well, there is Ireland and the UK and Canada and the United States and I have a sense of humour and that is why. I never announced it, we didn't send out invitations, we didn't put it in the press, we didn't announced it to anybody. I mean that is a fact.

INGAR BECKMAN HIRSCHFELDT: Well, we got invited.

KURT CYLKE: Yes, you got invited after you asked to be invited. I mean Rosemary called me up and said, Kurt, what do I do I have got this letter this lady wants to come to the meeting. I said fine invite her to the meeting, why not. I mean everybody is here who is not out of those three countries on that basis, Australia, New Zealand, Denmark, Japan, I mean I am dumbfounded by it. I mean Japan, we were asked to invite the Braille Society, and I like Hiroshi, and Hiroshi showed up, that is great. The Dutch are here because they are observers from IFLA, that is how they came, you know and so forth. It is not a problem. All I am trying to say is and I don't want us to go away with bad vibrations, but we want to go away saying, hey, we got together, the subject is important, this really should be addressed and there is an appropriate venue for that, and that is maybe IFLA, or maybe the World Blind Union. But certainly not here, I mean not at this meeting. It is too close, it is not the right venue. I hope nobody else is upset. We have a nice venue here, we have nice food, we have nice conversations and we learn stuff that is good, but I don't want to regularize this.

ROSEMARY KAVANAGH: I think you posed the question, is it the right venue?

KURT CYLKE: I think IFLA. IFLA has a significant potential, you have a master organization which takes care of the logistics, you have a communication tool the IFLA journal, you have all those other telecommunication tools, you have people to set up the meetings and structure the meetings and you have justification for travel, for those people who have difficulty in getting their organizations to allow them to travel. I think IFLA is the absolutely ideal venue. They handle it in a very rational way, they travel the world, sometimes they are in the east sometimes in the west and so forth, I mean everything there is perfect.

EUCLID HERIE: Well, there is one thing missing in IFLA, at least I think there is, my experience is, what is their consumer participation? Are we going to have more librarians for blind people.

KURT CYLKE: No, I think you have to -- well, that is their business, I don't want to get into that. But if they want to involve consumers they can go and involve the consumers.

EUCLID HERIE: They don't have a track record of doing that.

KURT CYLKE: No, they do not. They do not have a track record for communication, that is what we are talking about. They don't have a track record for a lot of things and I understand that.

EUCLID HERIE: I mean I have had a real struggle for our organization frankly participating in this round table of libraries for the blind. They meet all over the world, they meet every year, twice a year, they have an executive and I keep saying things aren't changing that quickly and what do we accomplish? I mean

I am asking these questions of Rosemary and I have asked them of her predecessor and I will continue to ask them.

KURT CYLKE: Well, obviously I asked the same questions because I don't participate, but what I am trying to do is say, Euclid, from this group we can have that kind of interest.

EUCLID HERIE: Oh, yes, it is an option. But the other option is not much.

KURT CYLKE: That is a better one.

EUCLID HERIE: I have an announcement about tonight, after lunch.

KURT CYLKE: Okay we will get together at 1:30.

---LUNCH RECESS:

KURT CYLKE: All right, we will open this afternoon with John Cookson again who will go on for a bit and then we will turn the meeting over to Stephen King. John.

JOHN COOKSON: I just want to very briefly come to a closure, so to speak, on the topic that we raised this morning regarding a communication mechanism to further our objectives. I would like to restate in kind of a very personal and very selfish perspective

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what I want from this meeting and what I want from this communication.

I have foolishly made commitments to deliver out of my laboratory prototype materials and models of talking books with the proper coding and with the proper features on it and I find that in order to do that within the time allotted that I need all the help I can get. Furthermore I know that there are significant work done in other forms in other laboratories and I need to find out what that is and take full advantage of it and so I propose that that is the mechanism, this communication mechanism is a way to approach that and I think we should proceed vigorously with it.

Clive and I had a conversation during luncheon and we propose a title for the listserve, the name of it would be Digital Talking Books for the Blind, and this helps specify the area of interest I think, to a degree that will discourage the frivolous and encourage the serious participant. We will be working on a welcome message that describes the suggested content and the intended audience.

There will be a mechanism to subscribe and when you subscribe you will get the welcome message and any reminders or any news items that may be relevant at the time, and the internet address of the moderator or perhaps the moderator is not -- a help address might be a better term of a person who can assist you if you need further information and that would be Clive.

Then this list will appear in a catalog of those people who compose list of lists so that the people on internet can find out what information is available and what the forums are and so on and this would serve to attract the participation of serious researchers who may have something to contribute and may just want to observed. We think this may be a very fruitful forum.

Hopefully we will have that, or at least the draft of some of that available tomorrow. I think we need to somehow acquire all the addresses of all the people who have an interest so that the final version perhaps can be mailed to you. Would anyone want to add to that or comment on that?

I guess one of the things that we would perhaps ask at the point of subscription is some indication of what your interest might be as a participant, and by that I mean a brief description, maybe one sentence of what your function is in the development process, are you a student, are you a librarian, are you a manufacturer, exactly what it is. This gives the recipients of communications from you some idea as to how to evaluate what it is you have to say, where you are coming from, or whether you have anything worthwhile to pay attention to or whatever. I guess the intent of that is to help other people evaluate your suggestions and opinions.

One of the things that occurs to me that I might make available off hand is some of our research results, for example the ones on coding. You may have seen our digital collection access system paper which describes a computer for the hosting of digital materials that represents books and one of the features of it was high speed IO from an analogue source, and our analogue source is tape, four track, and on these tapes one track goes forward in time and the other track goes backwards in time and one of the things that you might want to do when you code this material is to run it through a perceptual coder, which are new phenomenon and no one, well it would be unusual for a manufacturer for example to wonder what happens when you put material inverted in time through one of these algorithm, because that is typically not the intended purpose, but we just might want to be able to do that. So it is a valid question what happens if you try that and strange things occur. We are in the process of doing a little bit of research, a little bit of evaluation of how that turns out.

A perceptual coder is a device that makes certain assumptions about the way humans hear things and they hear things in a temporal sequence and if you invert time it may just behave differently. But that is the kind of thing that might be of interest to the people at the very nuts and bolts level, shall we say, of the development process and that is the kind of thing that I would offer on this communication. Are there any suggestions, comments?

Well, then I take that to indicate that we have perfect consensus on the establishment and the intent of this mechanism. Stephen, I think, intends to demonstrate or somehow present to us some of the hardware that we have available. Would you care to do that at this time?

STEPHEN KING: It is probably easier if I just go over there. As we told you yesterday about three years ago RNIB built a dozen prototype CD ROM based players and the objective for building those was to put them out, and I will use the American words, into the patrons hands to start to get feedback from them about a presentation of information in a random access form and how could you present information. Those players have been out with I think, and I am looking at John, over a hundred patrons over the last year with a full time field worker gathering information about how people interact with those players. That has told us an awful lot about how people interact at the user end and at the simple end of presenting information. And I think it is probably important that I qualify --

JOHN GRIFFITHS: If I could interject. Half of the recipients were using the talking books and half weren't using talking books, that is important.

STEPHEN KING: I think that is a very important point, that half of those members were members of existing talking book libraries.

EUCLID HERIE: All blind?

STEPHEN KIND: All blind. And half were people who were not existing members so we were trying to gather information about how they interact. I think the other point we are just making is we were talking here in the program material that we provided was closer to what RNIB in its talking book library and what is generally provided through the Library of Congress material as opposed to student material and professional material, so that was the basis of the material that was sent out. So it wasn't highly structured material, but there was some structure available.

The outcome of that has been a constant feed of input and we have been thinking, you know, where do we go from here? So the next generation of sort of test material is now on the table here, and I thank people coming back from lunch who had a look at it. I just really wanted to sort of set these things in context as to where they are.

There is a player here, which is a sort of light blue player which at the moment is sort of a dummy box of tricks attached to a CD ROM player. Because we had to learn quite a lot about how do people interact at a sort of a simple level, how do they access random material because the original prototype had a ten-key phone pad numerical thing on it and we learned quite a lot about how people interact with that and out of that came some different ways of encoding or allowing people to get access to different features of the players; and that has been incorporated into this player, and you have seen some of the features that have been incorporate into the design of this player. We would certainly not be saying that this is still quite a long way, we think, from a final presentation of a player but it is beginning to get towards the type of player that we have in our mind for a particular specialist market.

The other player that we have got sitting here is because we listened carefully to people's criticisms

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of player technology and saying, well this is all very well but it is a big heavy thing and I can't take it on the bus, I can't take it to bed with me and what have you. Now, just a while back we saw a publicity from an organization called Arts Communications who have got into providing information in museums and art galleries and they have taken CD ROM technology, packaged it up and packaged about thirty hours of material into a small player which I am holding in my hand which is a box about the same size as the Sony discman players.

They developed this to provide again random access to an art collection and the sort of intriguing thing about this is sort of a) it is small and secondly it is build for random access and either patron control random access. It has a keypad with naught to nine on it and a variety of other numbers and it has got a shoulder strap and it is a nice small light item and built into that is eight hours of rechargeable battery.

The company that has been designing this is a very innovative company that has done a lot of talking products before and is quite interested in looking at designing players in this area. The concept that we have been thinking about there is another concept of taking this player and injecting it on top of a docking station.

Some of you who have seen personal computers have seen the small portable computers which are injected into a docking station and so you could have a concept which is not dissimilar to the blue player that we see here, but consisting of a small portable player in a docking station. When it is in a docking station it plays through a loud speaker, you can play it using either some simple hand held controls, perhaps like you would use for a television and it would recharge and run from the main in that state and then when you want to take it away you can take it on the bus and take it on the train and take it to work and do what you like with it. In that state it would play through headphones.

One of the reason we have talked to this company is they appear to have been successful in selling this concept almost throughout the world, they have got contracts in Holland, in the UK in the United States in Australia in South Africa and they are going to be manufacturing this particular sort of box of tricks in volume and we have talked to them about the possibility of just adapting this technology. It is a company called Arts Communications.

It is a design and marketing company. It has no manufacturing it just contracts out all the manufacturing to other organizations. I think there are three builders to this particular player.

Then the sort of other concepts that we have was demonstrated to us when we are looking at the Daisy product yesterday which is playing again the same physical media of the CD player on your PC which would allow you access to additional functionality depending upon the program which is on the disc. We can conceive that you can have a disc where you would access different levels of that functionality across different types of players like this.

I think the thing that we are particularly keen to ensure is that the underlying technology is not a proprietary technology in other words the disc can be accessed through all these different types of media and potentially open up the markets for other manufacturers to manufacture players of different types.

We are aware that this particular player may well belong to the commercial audio book player in the commercial market and there are moves afoot to launch audio books as a CD base product and that would actually change the face of everything we do if things like this became a mainstream product that is available to everybody.

I notice when I came into Toronto when we drove down a large book store called the Audio Bookshop which is just down the road from our hotel. In the UK audio books are the fastest growing software medium at the moment. So we actually have a feeling that this whole area will be taken out of our hands quite shortly and develop as a commercial product area in which case our business potentially is providing home delivered library services which are unlikely to be properly served via a commercial market in which case we are probably back to highly specialized, simplified players for people who are housebound or have other disabilities and aren't approached through the library markets.

So I wanted to sort of show you these players because these form the basis of our sort of player research program of understanding the type of functionality you might attach to players and what one might do, and it helps us both understand how patrons interact and give us again some more platforms to do client research and also some platforms to start to allow us to cost the whole sort of basis of conversion of our libraries from one format to another. But even looking at this type of range of products at the moment the costings give us some cause for optimism that it is actually an affordable type of product over a period of time.

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So I just want to put those things in context. They are there for people to have a look at. They are not final products by any shape or form, they are there to provide us with some sort of test purpose and evaluation.

Does anybody have any questions arising out of this.

EUCLID HERIE: How many hours do you get, thirty hours did you say?

STEPHEN KING: There is a variety of different -- the Arts Communication small portable thing has about thirty hours of recorded material. At the moment it tells you all about the Reitz Museum in Amsterdam and all the pictures in it, and as you walk around you either key in the number of the picture or some of the other exhibitions they have got. They have got infrared controls and it tells you as you walk around and you can choose the language so you can have it in Dutch or you can have it in English or in German or in French. We had a bit of trouble, this one would only talk French to us this morning.

DAVID MANN: We are in Canada, you know.

STEPHEN KING: Yes, we are being politically correct. So thirty hours. On this player here, this one is designed using MPEG, I think, which potentially allows up to fifty-three hours. But it all depends upon the amount of compression one wants to put in. Our basic specification was we wanted it up to twenty hours. So both of these fulfil our criteria that we had set up. The potential to do more open up a whole pile of new possibilities. But that is where we are at the moment.

At the moment we haven't evaluated yet as to whether the sound quality is good enough at those levels of compression, we are a long way from any of that. But you can at least hear and make out what is being said there with those levels of compression. So here you have got thirty hours worth of material and compression, here you have got about fifty hours worth of material using MPEG compression and those are the two sort of compression systems that we have been looking at for both of those.

KURT CYLKE: What is your timetable?

STEPHEN KING: Amongst other things a time table to a certain extent depends on funding and completing the work. We would like to move to starting work on converting our library in 1996. But we need to know where we are going, we need to resolve some of the problems.

In other words are we going to keep uncompressed files, or are we wanting to keep compressed files, and quiet a lot of that is set out in the paper that we have given to you in terms of a strategy because we have to resolve what is going to go on downstream and then we go right back to the beginning and start at the top of the stream in terms of working on the library, and so the proposal would be sort of over a two-year period build up titles in the library until we got sufficient titles and then you start to distribute players. Because you can't launch a library service without sufficient titles in the library otherwise you just start with a bookshelf.

So we would start with more than a bookshelf, we will start with a library and then run one library up over five years and the other library down over five years, so we are talking about still a five to ten year cycle and we are at the very least two years away from launching if not more. So that is the cycle we are making.

We do believe that we need to resolve some of the downstream interaction and conundrums. How do you present a cookery book? Do you present it in a very structured way that we had been looking at with the Daisy project. Do you look for a chocolate cake in that structured way, looking at cake and then looking at chocolate cake and then finding this chocolate cake; or do you see the word chocolate cake and then let it find that, or is all that too complicated for the average patron and actually you present some less structured way of giving access to some of that information, and if people want very structured access then you go to a sort of PC type application.

So we need to resolve quite a lot of that then you can start to look at your library, but we need to resolve the client end and the client presentation end which would then allow us to go back and start to look at how you organize your library.

KURT CYLKE: Can you put dollars to that?

STEPHEN KING: Yes. Both of these are priced out less than what we are paying for the existing Clarke and Smith players, so less than $200.

DAVID KORMANN: Based on what quantity?

JOHN GRIFFITHS: We didn't even give them a quantity. We asked them whether they could manufacture down to a price and in both case the manufacturer said that they could. They were aware of the size of our market, but we certainly didn't make any commitment to say, give us a price for 70,000.

STEPHEN KING: We talked about sort of five and ten thousand a year. Because if you look at the insides of this, the insides of this are a $25 Philips

CD player and some bolts and chips and a power pack. There is not a lot inside that. If you unscrew it there is a lot of fresh air. So there is not a lot in them, what is in there is the development cost and the tooling cost.

EUCLID HERIE: Is the disc not fed?

STEPHEN KING: It is very light. It is all mass produced components. The point is you are trying to design things around existing mass produced components.

EUCLID HERIE: So you are in kind of a race.

STEPHEN KING: I don't think ---

EUCLID HERIE: If he ever went out of the manufacturing business you are more than welcome to.

STEPHEN KING: I don't think that enters into it because all of these systems, the whole proposal is that they could be manufactured by anybody. Clarke and Smith could, if they wanted to get into the manufacturing of this type of player if they wished to. Which, you know they might want to, but I doubt it.

Again a lot of those are bought off the shelf as components.

KURT CYLKE: These are yours and those are somebody else's, the big ones.

STEPHEN KING: The big ones are Plextors

design, but after a lot of discussion with us and others, and we have been working closely with them to help them design this particular box of tricks.

WELLS KORMANN: I was wondering when is the Pletxor system going to critical design review, because usually that is where you are making all your hard decisions on your design; do you know when you are going to critical design review on the system?

STEPHEN KING: I don't think I understand the question.

WELLS KORMANN: I was just curious as to when you are going to be making all your blue line drawing all your critical design reviews of that particular system; is that coming up later this summer?

STEPHEN KING: I think we are a bit away from that yet. We want to look at that sort of presentation. We have got fairly good evidence that that type of presentation should work but we need to try that out with clients and actually get them using it. This presentation is based on the feedback from the previous prototypes. I have to say that of all the RNIB people in this room we have all got some small reservations about that particular design.

WELLS KORMANN: So you are still doing risk reduction phototyping?

STEPHEN KING: Sure.

WELLS KORMANN: What sort of durability tests have you done on that?

STEPHEN KING: None. We are a long way from that type of durability engineering.

KURT CYLKE: When you say anybody could build them what do you mean?

STEPHEN KING: The underlying objective is to develop a system which we have been talking about using industry standard compression techniques so that the disc, which is in here is actually playable in that player, playable in that player and playable on the Daisy type player.

KURT CYLKE: I thought you mean you owned the design and anybody could build them. That is Plextor's?

STEPHEN KING: That is Plextor's attempt at building a player. That is their player, sure.

EUCLID HERIE: Is that the Japanese one?

STEPHEN KING: Yes, that is the Japanese player, yes. I think some of the Japanese organizations are also interested in that type of player.

EUCLID HERIE: Are they designing that for this kind of market or are they designing it for a bigger market?

STEPHEN KING: This player? Plextor is a

manufacturer of CD drives, my personal computer at home happens to have a Plextor drive in it, but they are just a large manufacturer of CD drives so they understand the technology.

CHRIS DAY: Stephen, they are manufactured for this market.

STEPHEN KING: This is manufactured for this market. This is customized for this particular market as opposed to a general market.

EUCLID HERIE: Have they given you any idea of the price?

STEPHEN KING: Nobody has quoted us a price but we are saying for this type of market, for the way we would have to operate, you know we couldn't be paying more than $200.

KURT CYLKE: Are they a privately owned company?

CHRISTOPHER DAY: I have got some details of the company.

STEPHEN KING: It is part of one of these large conglomerate companies.

JOHN GRIFFITHS: They also got manufacturing in the States, they are a very large company.

KURT CYLKE: Now I would ask that question, are you either or and then you would say yes. Are they privately held or are they sold to the stock held company.

STEPHEN KING: No, off of my head. But if you look at them in sort of the CD player market they are one of the sort of larger computer based CD player manufacturers. I think one of the points we need to emphasize is that we are not particularly, one of the things we want to achieve is that we are not actually reliant on any one particular manufacturer, we actually want to achieve a situation where there are multiple manufacturers of players out there offering different features and accesses to an underlying technology.

We as an organization are committed to providing players to some of our clients, particularly home base clients, particularly the elderly clients with multiple disabilities and therefore we want to ensure that we have got a player a particular player that addresses that market and that is likely to be a custom design, so this represent sort of a custom design. What we are thinking is that this might represent a non custom design that is available to all sorts of people in other ways.

EUCLID HERIE: I understood, and maybe I am not too technical, is that the problem was that the disc itself was not of a capacity to have the kind of quality you get now. My kids bought me a CD player for christmas, I have two CDs now and I play music on it and I understand that, but I understood that the quality wasn't the capacity of the first type of disc. Is that technology really at that stage.

JOHN GRIFFITHS: You could reduce twelve hours to eighty hours on a disc with the quality.

EUCLID HERIE: Somebody told me that the disc didn't have that capacity, I guess they do.

JOHN GRIFFITHS: Oh, yes they do.

EUCLID HERIE: There was a Sony little machine that was around a while about two years ago and, it had the whole encyclopedia on in a little disc the size of a little cigar box, but it didn't have a whole encyclopedia voice on it. It had a whole encyclopedia and a little sound box.

JOHN GRIFFITHS: Yes, sound takes a lot more.

EUCLID HERIE: Well I understand that, that is my point. So you see the thing with the press they put out all these statements that, here is Sony who has a whole encyclopedia on this little machine, and people brought it up to my office and it only had little bolts on it and the rest was all print. And I am asking the question now, are we really at the point where I can get that same thing with the whole encyclopedia in sound on it?

CHRISTOPHER DAY: No.

EUCLID HERIE: Well, that was my question.

CHRISTOPHER DAY: But perhaps we could say what standard most of the manufacturers are saying about their compression systems and that is that if we are working on a standard CD 630 odd megabytes, if we compress it to around about twelve hours then you will get the equivalent of reasonable quality FM. If you compress it to thirty two hours you will get to AM quality, if you are comparing it with the radios, and I think that that is probably a reasonably good analogue.

Also it is worthwhile to mention that the compression techniques that are being used at the present that some of them produce far better sound even though they may be compressed more. For example it is acknowledged that certain of the MPEG coding even if it were compressed to thirty two hours on a disc may well be the same as a twelve-hour compression using another system. There are variations, that is the only thing I can say.

Generally, from the experimentation we have done at present we feel that if you can compress our talking book which is on average twelve hours on to a CD we will be giving our patrons considerably better quality than they have ever been used to, and I think this is a real plus.

ROSEMARY KAVANAGH: I don't think that is what Euclid was asking, though. No, you can't get a whole encyclopedia.

CHRISTOPHER DAY: Exactly.

ROSEMARY KAVANAGH: And you cannot get volumes on, but you can get about three book sizes.

CHRISTOPHER DAY: Actually we are not talking about the same thing.

EUCLID HERIE: I am not even sure you get three books.

CHRISTOPHER DAY: We are talking about text based files and audio files, and there is a big difference between the two.

EUCLID HERIE: I understand that. But the museum one that you got in the ten languages, and I listened to it this morning, but my guess is that, and I think I heard Stephen say it had thirty hours capacity.

CHRISTOPHER DAY: Yes, correct.

EUCLID HERIE: But I am sure it doesn't have thirty hours of audio on it, it probably has an hour of each, maybe, I don't know, on each language or half an hour in total.

STEPHEN KING: The answer to that is ---

EUCLID HERIE: Nobody spends thirty hours in a museum.

STEPHEN KING: No. It just so happens that they present the same information four times in four different languages and that is why they need a very large amount of storage of information. But actually when you go to, is it the New York National History Museum they have a whole presentation of charging elephants and roaring lions and all sorts of stuff going on in the background to make the whole sort of experience entertaining. We have got some of the reviews of that.

So it is pretty good quality sound from what we can hear, but you know we don't know yet whether it is up to the type of standard we want, but the impression that we have got is that we can deliver a sound quality which is better than the existing generation of talking books, and that must be better.

KURT CYLKE: I think the question I asked earlier I asked in an improper way and I think it is just the language I am using is just not correct. That Plextor machine, you said anybody can build it, in other words do you own the drive and the innards of that machine, what do you mean by that, that anybody can build it?

STEPHEN KING: That player there is Plextor's player.

KURT CYLKE: All right, let us assume, and I want to walk you through a scenario. I mean we have had some awkward experiences, not with Plextor, but you buy the Plextor machine and you buy ten thousand of them, and tomorrow you say that they are no longer interested in building those machines, good bye, what happens to you then?

STEPHEN KING: You build another one with somebody else. You see, your objective is to have multiple sourcing of all your players. You know that is an experience we all have.

KURT CYLKE: Yes, we have both had an awkward experience with that kind of thing, you know the sole source kind of thing, and I mean I am not trying to announce anything here, but I mean we are almost at a dual source situation and then we have had awful funny things happen on the way to the store, so that that is the one thing. For example on our second source, after getting our second source up, and this is the situation, Asidee (phon) deck they told us arbitrarily that they were no longer interested in pursuing the deck. They were kind in saying that they would give us a year and they would work with whoever it is to bring up another deck. If it weren't done we would have been out of business on that second source last week.

You know, I am saying that it is almost like we would talk with Clarke and Smith, no disagreement with the machine or anything, but if he dropped dead tomorrow, that is the thing with the privately held company, goodbye talking book system. You know from a management point of view that is what I am worried about for the next generation that we don't get into a situation where we would be controlled by the industry, not we controlling the industry.

STEPHEN KING: I think that is very much on our mind as well, and that is why we are trying to ensure that any design is based on a set of industry standards and those industry standards are being used for other things so all the components in those players are being built for other purposes.

The unique thing at the moment, which is unique to the Plextors because they have invested in building the tooling, is the tooling around the plastic of that. But there is no particular reason why somebody else shouldn't do that. And at some point if we decided, if RNIB decided to go into it, it may well be that we will impose our own design on something and have it manufactured for us, or we may buy a standard design which is used for something else, and that is why there is a range of things on that table.

SUSAN SCHNACKENBERG: My question is, if you took the CD that plays in the Plextor machine, can you play that in a standard CD ROM drive.

JOHN GRIFFITHS: Yes.

KURT CYLKE: We have been saying yes, that was the answer.

STEPHEN KING: But that is our objective, you can play the disc in a variety of different players, so if you choose not to have one of those players and you play it in your CD ROM.

For those countries where closing the format is important for copyright control purposes, again built into the ideas that we are trying to achieve is to build that locking into the software so you can put it on the disc. So actually you can authorize a person to use the disc, so whatever player they have to have a key code or it is built into the player which you own or some other access.

We have got a variety of sort of techniques which we have been looking at to stop people. As far as the UK is concerned at our current copyright agreements we thing probably we would have to remain on a closed disc. Actually it is a small change right at the end of the process that you actually effectively flip a couple of bits on the disc, which says either a close disc or an open disc. And one would read on anybody's player and one would not read, it is your choice in the production of the disc.

JOHN GRIFFITHS: I think what is important here as well, apart from the player the disc could also be read by a PC. With drives that are coming out they are versatile.

EUCLID HERIE: I think Mr. Cylke's point on the private manufacturer and if people do think there is a market out there and there is, in some ways I think it is going to get narrower because there are so many other things now with computers and internets and everything else it would get down because students will be using E-Text and all of that stuff, and then you say it is going to be down to the leisure reading maybe or classics or certain types of literature. I guess it reminds me of the Taj brailler that everybody has been trying to make a better Perkins brailler than Perkins, and it has been the work force and it is not expensive. And now Dr. Jernigan has announced that the National Federation is going to sell a Perkins brailler, it is all public domain material. The people of India were going to sell the third world all these look alike Perkins braillers like the swatch watch and so on, they never had a product that was much good and then in the end they would buy a company and they would say, I don't know why we are in this anyway. So you know you can't find Taj brailler except in the junk yard somewhere. It never went anywhere.

I guess there is a real risk that somebody, and I don't know this company in Japan, but anyone like that who thinks there is going to be a market and then they start to look at all of the questions involved then they might say, oh, well now we are not so sure anymore. And that is going to be the problem and you are going to go down the garden path with them, hopefully they will take you all the way to the gate, but if they don't, you know it is a real problem. My concern is we are a long way from it, I guess is what I am trying to say.

STEPHEN KING: But if you think about it, I guess looking around the room, most of the people in this room are computer users of one sort or the other and I guess fifty percent of computers these days have CD ROM players on them, and that means people have already got the means to play the discs that we are talking about.

KURT CYLKE: Seventy percent of the people are on welfare, etcetera, etcetera.

STEPHEN KING: Sure. But the components are being made.

KURT CYLKE: For the students, yes.

EUCLID HERIE: But not for leisure reading.

STEPHEN KING: But the main underlying components for all those are being made in large volumes, and then you are adopting that to provide some specialist types of player. But you are absolutely right if the volumes aren't there nobody is going to make them unless you pay enough.

EUCLID HERIE: Well, why don't you put a talking book on a videotape, if it has got the capacity, and I can watch it on my new TV. It has got stereo, that is what I am doing with DBS.

JUDITH DIXON: How would you fit that in your pocket.

EUCLID HERIE: I don't carry it around.

KURT CYLKE: I mean it is the whole thing, you know, if you have got a Philips two-track standard cassette there is a thousand or five thousand manufacturers who can build them, and it doesn't make any difference. You might like the one you have got and you can get it anywhere off the market, and it is that concept, do you have a close system unique to you or what happens.

JOHN GRIFFITHS: That is why we look at high speed technology, it is available anywhere.

EUCLID HERIE: Just one point. The other point, Stephen, that you mentioned about things being taking over by the audio store, which I haven't seen in Toronto, but I went into the one in Denver and bought a whole bunch of commercial books, and most of them are excellent, of course they are not formatted for me, I don't know, and they are not cover to cover in most cases, I don't know which cassette I had, I had to actually have one of my staff label them all so that I would know which tapes and the names and everything else.

But having said that, let us say that they were to overcome that and say, you know this is track four, but having said that the concern there again you see is going to come down to ownership of the copyright and so forth, and yes there is going to be some commercial books that is going to be available, but I don't see that 200,000 titles that is ever going to be transcribed commercially, and so that is going to be another problem with the discs. If it is so open that it can be played on anything then you are going to have another problem.

KURT CYLKE: I am not arguing with Euclid, but our projection is a little different now. In other words we say or we think when this CD becomes more popular in the automobile and they are there now, but I mean when they become as cheap as $50 and you got the capacity for the twelve hours or whatever, then you have got the market, then the book comes in, then we are out of that part of the business which is the popular current leisure book and we are still in the business for that smaller market with students, you know and the other kinds of things.

EUCLID HERIE: Well, somebody is going to have to buy them, right.

KURT CYLKE: No, no, that is your problem, the reason we are making them today is one, you can't buy it and you can afford it; and two, the libraries can't buy it for the people who can't afford it, or those who don't wish to spend their money. But I mean it is not available at the moment, but when it is available you go buy them.

JUDITH DIXON: Kurt, there is also a librarian issue here and that is they are never going to put what you would consider to be a reasonable monitoring function into the public, you know riding around your car and listen to books, popular bestsellers and that sort of things. I mean our library does the whole range.

KURT CYLKE: Well I understand there are two markets.

JUDITH DIXON: It is not just students.

EUCLID HERIE: It is also the multiplicity of copies you need. You got a hundred copies, it would be expensive at $80 a piece.

ROSEMARY KAVANAGH: The analogue would be to libraries and book stores for this.

JUDITH DIXON: But book stores still don't have ---

EUCLID HERIE: I will buy a best seller for $30, but I can't ---

KURT CYLKE: But what I am suggesting Judy I think it is almost here. I mean right now we have got encyclopedias, dictionaries, etcetera, etcetera, CD ROM on braille.

JUDITH DIXON: We are talking about apples and oranges here.

KURT CYLKE: I know that, that is all right.

JUDITH DIXON: Okay. We are left in an electronic digital version, I mean it is not digitized audio in a digital medium, and those are two very different things.

KURT CYLKE: Well, I don't look at it from that perspective. I look at it from another perspective, which is the end product. You can go out and get just what I described.

JUDITH DIXON: Okay, so you get two ends of the spectrum. You can get an abridged Danielle Steel in some type of an audio form, we don't worry what it is, and you can get encyclopedias and dictionaries, reference, you know big deal reference books.

KURT CYLKE: But I am suggesting that the abridged Danielle Steel will soon become, as soon as the compact disc machine or the thirty hour disc is available in the automobile it will be come the unabridged Danielle Steel. So you will have the unabridged Danielle Steel, you will have your reference books and then there will be pieces of the market that you wouldn't have that you will have to continue to buy.

JUDITH DIXON: I think that little is a pretty big piece.

KURT CYLKE: Absolutely. But it is less than it would be now.

STEPHEN KING: I can only really tell from the UK perspective because we distribute differently, and that is why I said geography is quite important. We believe that in the public library service as it is now it is unlikely to provide the home delivered service that quite a lot of our patrons need.

If you look at some of the statistics fifty something percent of the audience that we are dealing with are housebound, haven't gone out of the house in the last month, and twenty-six percent of those are never visited by a friend or neighbour. The home delivered service is still an important part. Now that is not provided in our national setting by the public library service, and therefore there is going to be some need for that.

KURT CYLKE: In our situation there is a significant home service that is not tailored to the handicapped or to the blind person, it is the rural areas and so forth, that meld could possibly be made with us.

STEPHEN KING: Just as a matter of statistics in paragraph 2.4 of the paper we gave you, we had a count at the end of 1994 that available in the UK there were three thousand abridged commercial audio books and fifteen hundred unabridged audio books, you know full length unabridged mainly targeted at the library market selling at about $50, $60 and actually a lot of those were our recordings.

KURT CYLKE: But still ours are so little that it is just coming. I mean it is really just beginning.

CHRISTOPHER DAY: There is another reason why they abridge the audio books and that is that they recognize that most people travel in the car for around about two hours a day probably at the outside, and the idea of getting a book which is unabridged, which is going to run for twelve to fourteen hours for most of the people who put forward this proposal they did not consider this reasonably because they reckoned that most people would like to read a book abridged and then read the next one. So probably what would happen, following your analogue, Kurt, is you will probably finish up with a fifteen hour CD with twelve abridged books on it.

KURT CYLKE: If you are correct, and you might be correct in the UK, but I don't believe you are correct in the US. The reason they did it is straight economics, in other words number one you don't want fourteen cassettes flopping around the place, and as Euclid said quite correctly, you could kill yourself driving. And second thing is that you could only stand for so many dollars. And if you had it on a thirty hour cassette and you had that half speed four track I would guarantee they would be selling them to you for a price. The demand is there.

STEPHEN KING: They compress them for the fifty cents.

KURT CYLKE: If you look at books on tape, which is the biggest one, the one in California, the biggest one and then they are several others, but they are doing a land office business in unabridged books, I mean a person doesn't want Moby Dick on two cassettes, because Moby Dick should be like twenty-four cassettes and it is just not reasonable.

CHRISTOPHER DAY: I think that that is probably reflected also in some of the books that they do abridge they choose the ones that would abridge reasonably. I don't disagree with what you said around the economics of it either, I mean this is another reason why.

JUDITH DIXON: What happens to the copyright problems.

DAVID MANN: Because they are aiming at the market for people who have the choice of reading print or tape which is not potentially our market.

EUCLID HERIE: There will still be a waiver involved in making the information accessible. I have on my desk somebody sent me five containers about this size, five cassettes in each and I got them mixed up, I no longer know which one or what order they were in. If I don't put the cassettes back I no longer know which track I am on.

KURT CYLKE: You would think there would be a unique and interesting approach to the management of it.

JUDITH DIXON: It goes on and on.

EUCLID HERIE: You can sell these commercial books as long as you want but there has to be somebody in a library for the blind that is going to have to make it accessible, otherwise there would be chaos

JUDITH DIXON: Not only that, you couldn't speed it up if you are playing it on a regular standard player, it is not labelled. People would have to go to a public library or somewhere like that to get it. I mean even those of us who have been out of our house in the last month would find going to the public library for all of our reading material very tedious.

KURT CYLKE: I have a very different view point I guess. I think as we lead the market, I mean we meaning the UK, with the audio books and so forth, and now we are following it, I think when all the advantages that you are talking about building in may very well be built in, Judy, by the commercial market.

STEPHEN KING: Some of the reasons are either the manufacturers we have been talking to are interested in this as launching it as a commercial product, and the people at Arts Communications are a group of companies who have been involved in book publishing and record companies. They are very interested in launching the whole concept as a commercial concept, and what we are doing is just a by product of all that.

KURT CYLKE: As fewer people read print and as the demands of society makes you have to keep up and as audio continues to emerge, I think there might be.

JUDITH DIXON: I don't think audio is ever going to be as popular as anything you can see, and that is an outrageous statement. I mean look at what is happening to software in computers, they are going from words to pictures, they are going from words to graphics.

KURT CYLKE: That is because people can't read.

JUDITH DIXON: That is because people don't know how to do things. They want to just see it and that is. I mean the power of the visual sense is so incredible. It has got to be better than hearing.

KURT CYLKE: One of us will be right and one of us wrong, or maybe both of us wrong or both of us right.

SUSAN SCHNACKENBERG: Although it is true that eighty percent of what we learn we learn through visual, we have seen an explosion in audio in the car in the last twenty years, from my reading it is true in the American library, it seems to me to be reasonable to speculate that if the CD format does take off it would be really rather nice if we can retreat from doing the straightforward stuff and focus on the difficult things, except that we have had so many new formats come into the market over the last twenty, thirty, forty years that it is really difficult to speak about these things. it is certainly an interesting idea.

KURT CYLKE: Well, it is interesting to speculate, but keep doing what you are doing.

SUSAN SCHNACKENBERG: Oh, yes, that is right, we can't retreat as yet.

DAVID MANN: Maybe we have to come back to square one just to say that if all a blind person wants to do is just be entertained and be able to say what happened in the story, then clearly an abridged book or even a radio dramatization or something will be enough.

But if we are talking about being able to function in a society which a particular bit of information is transmitted through the print medium of a blind person as to have it in audio then in fact perhaps we are talking about something different.

But if Kurt is right, which is that fewer and fewer people are going to read print so in maybe twenty, thirty years time audio or some other kind of medium would be the way in which entertainment is transmitted from one person to another then there may not be a problem, everybody will sit around having their coffee in the morning discussing the latest CD they bought and listen to.

But if it doesn't happen, whatever does happen if it is inaccessible it will be up to agencies of the future to make those entertainment medium accessible.

KURT CYLKE: I think, to quote Mr. Jernigan, I think this is noncontroversial and everybody will probably disagree with me. The significant subset of the blind committee, as there is a significant subset of the sighted committee want the information for information sake. The greatest number are into recreation and titillation and so on and so forth, I don't think that is our feeling. Now, that doesn't mean that you don't put a lot of effort into it and you don't provide those materials and so forth and so on.

STEPHEN KING: I think I would just sort of quality that and just go back to my cookery book and chocolate cake, because actually what blind people want to do is go into the kitchen and look up a recipe and cook something and also find out what the latest religious text is for this week and read that and these other things, which at the moment they can't do, and that is actually what we should be trying to move the agenda on.

KURT CYLKE: Well, they can do it, but very rudimentary with the indexing that exist. But that is not the people we are talking about. I don't think we talked about the cook book, gardening type people, he is talking about the computer programmer, business man, student, academician, you know. And so I would think the group that you are talking about is on the border of books.

DAVID MANN: But there isn't one group of blind people who only want pleasure.

JUDITH DIXON: Oh, no. I read non fiction and cook books and informational books and everything else. I just think that audio is an inefficient medium.

KURT CYLKE: For the blind person it is either audio or tactile at this point, so you are right. So you have got to make the best out of it.

SUSANNE SEIDELIN: We are talking about different people with different needs. We are talking about different kinds of players. What we should also talk about is that if we have a media that can be played on these different kinds of players we have no problem really. Is there a problem in reading an audio book on a normal CD player? If you don't have the need of going into a complex structure, no, there is no problem there. So what I think we come up with is that we have a need for special equipment where we talk about student literature, where we talk about also the cooking book, Stephen, actually, because I don't want to go through hundreds of chocolate cakes, I want to make the chocolate cake. So we are talking about leisure literature, yes, novels all that kind of stuff and they don't need complex structure and maybe they can just be played on a normal player.

JOHN GRIFFITHS: No, they wouldn't play on a CD audio player, only if you have them on a CD ROM.

JUDITH DIXON: But even on a CD ROM --

SUSAN SEIDELIN: But it will be accessible in the future, I think. I might be wrong but I think it will be accessible so that we don't have the problem Kurt talked of some minutes ago what will happen if Plextor say, no, we don't want to make the machine anymore. Maybe we wouldn't have a problem.

JUDITH DIXON: If it is a CD ROM drive do I have to take my computer to bed to read at night?

KURT CYLKE: Well, you have to take whatever it is to bed with you, right.

JUDITH DIXON: Yes, if they are little and friendly you know they are okay, but a whole computer on CD ROM drive.

STEPHEN KING: Well, they will become portable.

KURT CYLKE: Maybe it will be built some place else. We are talking not today, we are talking twenty-five years from now. I mean you will be going to bed with machines for the rest of your life.

STEPHEN KING: Here, Judy, that is what you are going to be going to bed with, something that looks like that.

JUDITH DIXON: Oh, that is not too bad. I will take that one to bed.

STEPHEN KING: That is the CD ROM drive, it has batteries and you just put your ear phones in that.

KURT CYLKE: Anyone else?

JOHN COOKSON: Could you clarify something for me? The Plextor, as I understand it, they are using MPEG coding, but MPEG is not standard in a CD ROM drive.

CHRISTOPHER DAY: No, they are using MPEG as a compression system, that is all.

JOHN COOKSON: Right. So you can't take this thing and stick it in a CD ROM drive and play it back?

CHRISTOPHER DAY: No, not that one no. There is no reason why not if you have the appropriate drive.

If you get the appropriate drive then yes.

JOHN COOKSON: I don't know whatever the coding mechanism is on the standard CD ROM whatever that is.

STEPHEN KING: John, what we are mixing up here is a prototype to allow us to demonstrate some things, so in there is a MPEG and if you take that disc out of there and try to put it anywhere else, no, it wouldn't play on anything else around, because that is the prototype built around a whole load of things. But the vision of the ultimate production system is something that will play on the CD ROM drive which will be around in five or seven years time.

KURT CYLKE: Well, when we talked three years ago, and correct me if I am wrong. I don't want to give the impression that this group is stagnant, but we are both virtually in the same place that we were then. You are still doing what you are doing and they are doing what they are doing. They are not going to build this particular machine, or they haven't taken a decision as yet.

JOHN GRIFFITHS: I think the books on the disc and the volume being compressed at the moment there isn't a standard publication, there is an unknown that we use. I believe that MPEG will become the standard.

JOHN COOKSON: So you will record at whatever standard is most widely used in the CD ROM drive?

CHRISTOPHER DAY: The thing that we have been saying throughout these meetings is that we are looking for technology which is essentially high speed technology so that the system that eventually emerges amongst all of this compression systems will be one which we undoubtedly will use. John and I have been looking at some type of CDI because we think this is a good system because you can encode the disc which is the thing that John mentioned earlier on. That does not preclude people from going off and buying something off the shelf in the high speed, because our other idea is that they should be able to encode the handset so that a blind person, so that we can still contain the media so to speak, we can still convince the publishers that we are into a limited market of the visually impaired and that they can only play our discs provided we issue them with a handset. This is just one of the other things we are thinking of at the time, so we have a very wide view on this still. I think it would be a little untrue to say that we are at the stage where we were three years ago, I don't think we are.

STEPHEN KING: I think we have moved ahead a long way in terms of, because the concepts of the design we have actually moved a long way in terms of the overall financial model and the operational realities of making a change. So from that point of view we have moved, but we actually haven't done anything.

EUCLID HERIE: There is one other difference and that is some commercial persons come forward, there is actually some product out there that is being used in the museum and three years ago nobody knew that.

CHRISTOPHER DAY: In fact the only decision as an organization is we made the decision that we should stop and transfer our analogue masters to uncompressed digital masters. Now that is the decision which is being put forward by our committees in the latter part of last year on which they have agreed. We are now trying on the technical side to think of the most economical way of doing that. But that decision has been made.

JOHN COOKSON: In your paper, Stephen, you mentioned the Optimage Disc Builder software, and I was wondering if that is a tool that I could use to model digital talking books. Is it a PC base thing that you could model a system on a PC?

JOHN GRIFFITHS: You could use it but it doesn't suppress the disc together in conjunction with this.

JOHN COOKSON: Okay, and so can it make a virtual CD on your hard disc?

JOHN GRIFFITHS: Yes, there is no reason why not.

JOHN COOKSON: Then can you play it back?

JOHN GRIFFITHS: Yes.

JOHN COOKSON: Can I get it?

JOHN GRIFFITHS: You can buy it.

JOHN COOKSON: Can I buy this authoring software then?

JOHN GRIFFITHS: Yes. The Optimage Disc Builder is a commercial product.

JOHN COOKSON: Okay. If you tell me where I will order it.

JOHN GRIFFITHS: All commercial shop, but you can get Optimage from Philips.

JOHN COOKSON: That might be of interest.

JOHN GRIFFITHS: But when you create the CDI the disc itself, we create the image, we create and keep it there.

JOHN COOKSON: But it doesn't do the whole production for you, or does it?

JOHN GRIFFITHS: Yes, it does.

JOHN COOKSON: Does it help you build the audio file?

JOHN GRIFFITHS: Yes.

EUCLID HERIE: Okay, Mr. Cylke had to make a phone call before 3:00 and it is about a few minutes to 3:00. I think we will stop here at this juncture.

--- Whereupon the hearing was adjourned at 3:00 p.m.

I HEREBY CERTIFY the foregoing to be a
true and accurate transcription of my
Stenomask Recording to the best of my
skill and ability.

B. Doucette

Barbara Doucette - Verbatim Reporter

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THIRD INTERNATIONAL MEETING TO DISCUSS AUDIO TECHNOLOGY AS APPLIED TO LIBRARY SERVICES FOR BLIND INDIVIDUALS

Volume 3

HELD AT: The Canadian National Institute
for the Blind
1929 Bayview Avenue
Toronto, Ontario
M4G 3E8
Canada

DATE: April 22, 1995

CO-CHAIRED BY: DR. EUCLID HERIE
KURT FRANK CYLKE

--UPON COMMENCING AT 9:00 A.M:

MR. CYLKE: Since some people will be leaving before the end of the lunch, I think that perhaps some words might be said at this point that are normally said at the conclusion of an affair. I just wanted to express my personal appreciation and our collective appreciation to Euclid for being the host. As usual, he has overdone himself. And to Rosemary Kavanagh and to the staff and to Carol Hamilton who I am sure we have never had arrangements that have exceeded these. So thank you, Euclid. We appreciate it.

MR. HERIE: You are welcome.

MR. CYLKE: This morning we have an agenda and it says "Topics Suggested by Participants". But let me just suggest the following order if it's reasonable with you. There are three things that I perceive remaining on the list to talk about and then I propose a round-robin.

The first is that John Cookson will have a second recommendation for an action piece. The next item that I would see is the suggestion that Steven King made with the list of topics that he had, with the concept of having an information exchange established if not through this group, through IFLA or through another source. But somehow, how could we accomplish what he is suggesting without forming a great bureaucracy.

The third thing is if you find meetings like this a useful venue, perhaps it could be arranged to continue it under another auspices, which would be IFLA. And then of course you have the problem with not having full consumer representation there, so maybe under WBU or maybe joint. I don't know, but that would be a topic. And then I would suggest that we go around the room and have each person suggest topics for discussion or make any comments that they would like before we leave.

Does anyone have any suggestions to alter that format or to add to it?

EUCLID HERIE: No, that's good.

MR. CYLKE: Okay. John Cookson?

MR. COOKSON: I would like to talk a little bit about a technical topic if we are ready for it at this hour of the morning. I would like to brief you a little bit on the topic of what we call Time Scale Modification or Variable Rate Playback or that particular area. I think there is an example of that sort of thing.

In the past or in today's technology using cassettes, the listener can speed up or slow down the rendition simply by altering the speed of the motor, and of course you get a pitch change. Now with the advent of digital methodology it's possible to vastly improve on that if you do it correctly. It's like in many other cases, the better the quality the more it's going to cost you or the more compute-intensive it is.

Now there is an example of an attempt to do that and if you heard the Plextor machine, they are coding the audio in a methodology called MPEG in which segments the data-stream into 20 millisecond blocks. And so if you throw away every other block then the stuff comes out at twice the spoken speed. But that's a very crude way to do it. It's contexted independent. So whatever day you happen to be on there has nothing to do with the way it's played back. And also, you could maybe repeat every third data block and that would stretch out the rendition. But again it's independent of the context and so it -- well, you listen to it and see what you think. It sounds awful to me. But it's not as bad as it could be because the MPEG algorithm actually tends to smooth out the transitions or the discontinuities between the phrases. So that at least saves you to some extent.

There are a variety of ways to deal with this problem. One of them is called Time Domain Processing and Frequency Domain Processing is another one which is a little better but it's a little more compute-intensive.

However, I think we are at the early stage of the development process and we see computer technology advancing at an alarming rate. And so what's expensive now in terms of computer power may very well not be in the very near future. The area that manages this kind of data processing is called Digital Signal Processing. That's a term you will see very often and it's often contracted to DSP. DSP capability is proliferating and it will very likely find its way into the projected set-top box that people talk about or multi-media presentation systems. So we can anticipate cheap DSP capability that we may be able to take advantage of.

Now when people speak there is a periodic component to the rendition of vowel utterances and the periodic component is sometimes referred to as the pitch period. So if you can analyze the spoken word and determine the pitch period then you have the opportunity of either repeating pitch periods or extracting them, and this gives you the effect of a variable rate without any change in the apparent pitch of the audio.

You can also, as Jon and his colleagues have done, look at silence. And if you could detect where the silence in the speech occurs then you can remove some silence or you can expand the silence. And again, you have a change in the rendition rate. So there is really kind of two variables there.

Now we have engaged a volunteer expert in this area and we have experimented with some of the software that he has provided for us. One of the things, this fellow generated the software; he worked at the National Security Agency and they have people sitting around listening to Russian and Chinese and so on. And it's their responsibility to type all the stuff up so they can analyze it and find out. They are in the spy business, whatever, and so they can determine what people are saying about us in foreign languages or whatever. But what they would like to be able to do is have the reaction time of the person doing the typing be variable. That was basically the context for his developing these. And he did some experimentation on the removal of silence and also the alteration of pitch periods.

It was his opinion, although he never did any real extensive research on it, that if you remove enough silence it becomes very annoying to the listener and a listener becomes fatigued. So that's a basic question. How much can you remove or how much can you dilate it and still remain in a comfortable range?

He had some rules of thumb about how many pitch periods you could add or delete and a kind of rule of thumb might be if you contract 3:1 that's probably the limit of understanding, but I don't know that there is any definitive research to make an authoritative statement like that. The notion of understanding is also a complex one. How do you measure whether a person understands what they hear?

So I think these are a number of questions that to me, they have some academic interest and I am kind of excited about exploring them from that perspective. But also, they have some real practical value in that in our design process we want to be able to bracket the parameters of some of the perhaps expensive features. No feature is free, so if we want to put a feature in a device then we should know the limits of the performance of the feature for the sake of cost control. To do that, to make those determinations, we probably need to find out, in some way get people involved, get the user involved, to make these determinations. So I propose to do that.

I have identified an organization that has developed some hardware and software that I think will allow us to begin to do some experimentation in this area. Their application is radio and T.V. broadcast; they are the guys that will take a person like I who speak in a normal voice and they will add it to the end of the advertisement saying, "Your mileage may differ...."

JUDITH DIXON: Very good, John.

MR. COOKSON: You didn't understand that? Usually it's the end of political advertisements when they tell you who paid for it. So in that case, the range of alterations is not as much as we might be interested in. But anyhow, they have some software and hardware that I recommended to my management that we acquire, and I think we can use it as a research tool. What I hope to do is design some experiments.

Now this particular device will allow the user to vary, I think, under real time control. In other words, the device is a computer. I think it's a 486 but it has also a DSP capability, a Motorola state-of-the-art visual signal processor and with various Time Scale Modification algorithms in software in it. And these people have developed several of them. One of them is based on a discreet co-sign transform which is really a linear transform into the frequency domain that allows you to in real time determine pitch periods of vowels.

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One thing I should mention, if you do any violence to consonants then there seems to be universal agreement that the more you fracture consonants, the worse the intelligibility gets, and in fact it deteriorates very, very quickly. So that's why we focus on vowels.

So they use this Frequency Domain Processing to determine pitch period. And that's a sophisticated way to do it. It's a little bit expensive but I think you get the best product. But that remains to be seen. But also with this device you can experiment with alternative algorithms as well and they have also implemented that. But the nice thing about it is, it allows you real time control. So a person can be sitting there and can crank it up and crank it down and get an immediate response.

Also, they are going to allow me to vary the ratio of silence elimination or dilation. And so this might give us an opportunity to determine just how much violence you can do to the silence before it becomes annoying or unintelligible or undesirable.

In fact I heard a demonstration in which the rendition of some -- I don't remember what the material was but another person speaking and it was cranked up 3:1. And I cannot personally understand that. I mean, it was just like worse than any of those commercials you have ever heard. And that was simply a reduction of or the removal of pitch periods in the vowels. And then the same material was rendered with an alteration in the silence periods and you would be amazed that at 2.8:1 instead of 3:1, that's what it happened to turn out to be, it was perfectly understandable. It was practically the same rate. In the first case, there was nothing done to the silence. And in the second case, it was both vowels and silence. So it's very intriguing how the two interact to allow for understanding and comprehension.

Now I have used the words understanding, comprehension and intelligibility and so on. How do you measure those things? How do you come up with a standard test? How do you find out whether a person is really comprehending what they are reading or what they are hearing? There is some literature in the field on that. There are some tests. Maybe an additional challenge is, typically these kind of tests are based on people writing down things with a pencil or a paper or whatever. Not all of our people that we want to participate use pencils and papers and so on, so that adds an additional challenge.

I think this is an area for investigation and these are the kind of topics I think we can pursue in our electronic information interchange.

Right now there is probably a variety of suggestions people are probably thinking even now in this room, how one would begin to attack these problems given the hardware and software tools that I have described.

So what I would intend to do is to begin to attack these problems and then share my results with you over our proposed electronic interchange and get your opinions, get your ideas, get your feedback and maybe design a series of standard tests or maybe we can somehow agree on what does it mean to understand the content of an audio rendition or decide what kind of things we would speak to persons to try to determine whether they understand it or not; what kind of recording device would we use; what questions would you ask them. And if they don't use a pencil and paper, how would you record their answers and how would you evaluate that data.

It's kind of an intriguing and exciting area to explore but there are lots and lots of questions. And I am sure no matter how you do it, someone might take exception to your results. But in the long term, it's worth doing I think because it will identify ways of accomplishing the rendition that we want and it will bracket the parameters that we want to know about.

I would also propose that after perhaps we decide what's a standard format or a standard way to begin to grasp some of these concepts, and I will do the tests and publish results and I will save the original packing material if I get this thing, and I will wrap it up and send it to someone else in some other organization here that might want to try to repeat this, perhaps in another language, perhaps with a different population, and see whether we can confirm the original results. In other words, share an opportunity to participate in the same type of research.

So I think that's an example of the kind of exploration that I hope to be able to do in the fairly short term. And it's also an example of what I would think would be a collaborative undertaking and an example of the sharing process.

STEPHEN KING: John, could I just interject because David was whispering in my ear.

MR. COOKSON: Sure.

STEPHEN KING: You were talking about experimenting in speeding the rendition up. But also in the library we run we have a significant number of people who actually slow it down to increase intelligible . And I think we must not lose sight of that.

JOHN COOKSON: Oh, absolutely. The device that I have described to you very much targets that audience as well. In fact there is an NLS book that I tried to read called "Being In Nothingness" by Jean-Paul Sarte, which is unintelligible at any speed. So that would be an example. Even someone who is a cognitive genius would benefit by slowing that thing down.

KURT CYLKE: It's just a bad narrator, John, that is all.

JOHN COOKSON: I tell you, it wasn't.

JOHN SIMPSON: John, I wonder if I can comment from another point of view too. Something that I was prompted by examination of the equipment yesterday to do. And that is on behalf of consumers, asking us to be considering all the way down the line towards the end production, speed variation, not arbitrary speed change. My experience has certainly been that the people who use the speed variation in the analog system, the whole range of possibilities. And of course you are talking about a smooth speed increase or decrease in that situation.

I would be concerned to see us develop systems that we arbitrarily set for speed change that put people in the situation where they might have to accept 2:1 to 1:1. Because I think there are all sorts of situations and particular people who want the whole range of variations between those and beyond them.

JOHN COOKSON: I thoroughly agree. The device that we had, that was on the table yesterday, I think it had a 2:1 and that's exactly what you don't want to do. Typically you would have a pitch period only a consideration. But I think with a more sophisticated DSP based system as the one that I intend to or I have recommended we acquire, you have the opportunity to vary not only the pitch period repetition or deletion; you can vary the silence as well. And maybe there is some unique combination of those two that gives the best effect. And we can certainly do that on a continuous rather than a discreet basis, or if you do it on a discreet basis you can make the resolution so small that it appears to be -- and it's probably a question of price.

KURT CYLKE: Anyone else?

JOHN COOKSON: Who would like to get their hands on this thing after I am done with it?

STEPHEN KING: Sure.

JOHN COOKSON: You have to give it back though.

KURT CYLKE: Okay, you have got a taker.

JOHN COOKSON: Okay. Are there any other comments?

KURT CYLKE: Okay. Yesterday there was a discussion that followed Stephen King's recommendation and perhaps the two things run together. You provided a list there and the list might be longer or shorter, but let's just say that we will start with that. And then is it a useful thing? And what organization or what mechanism would we use to implement that sort of a situation? Stephen, since you initiated it yesterday, if you would just repeat what you said yesterday, well, let's go from there.

STEPHEN KING: Right. At that time I wasn't thinking about any sort of organizational umbrella at all. We had discussed setting up list server which would provide a medium by which people could post information. There was some discussion about how do we sort of keep track of that and moderate that?

It appeared to me that throughout the two days that we were talking, there various areas to describe a lot of additional work that needed to be done before the type of systems that we have sort of received have some sort of share that needed to be developed to become a reality. And I was trying to divide those up into sort of overall project areas and try to find people who would just sort of moderate the information.

KURT CYLKE: Going to this ---

STEPHEN KING: Going to this list serve to keep an eye on what's happening in that area and try to stimulate information in there, become a raconteur in that area, what's going on. And the areas I have written down on my pad -- I have found a piece of paper you panicked me this morning.

KURT CYLKE: I didn't mean to do that.

STEPHEN KING: I have now found it again. But in particular, when we were talking about interlibrary lending and an electronic file formats there has been a lot of European user projects. And I am sure that is a fact we would have to be aware of that there have been other projects in that area. So that we ought to ensure that we dig out all of those and summarize those to make sure we are not re-inventing some set of wheels. I thought I heard our Netherlands colleagues semi volunteered to dig all that up for us.

KURT CYLKE: For my benefit and maybe for the benefit of others but probably just for me, how are you defining interlibrary lending? What do you mean?

STEPHEN KING: Okay, for example if a book is represented by a set of electronic files of some description, actually being able to send that either across a highly expanded internet given the size of the files, or send it across in sort some of medium. But the long term idea is being able to send it across a network of wires. Now we know that there has been quite a lot of work on that internet document going on and we ought to at least see what they have been doing. So that's what I meant by sort of the technology of interlibrary lending.

KURT CYLKE: No, no. That's fine.

STEPHEN KING: So it appears to us that there have been projects in this area in mainstream library and we ought to find out what else has been going on and just make sure that there isn't anything in there that we can hook ourselves into by not being aware of.

KURT CYLKE: The libraries for the blind as I perceive them are very at a rudimentary level, a very basic level. And while that's very interesting and I certainly would want to follow it myself or have the staff follow it, the chances of doing it or having anybody want the book that rapidly or getting involved in it or spending any effort in it would be very slight to me.

JUDY DIXON: There may come a time.

RICHARD TUCKER: Yes. Can I suggest ---

KURT CYLKE: Suggest that that's true, yes.

RICHARD TUCKER: Where you have a very large language area with a high level of production, you may not need to consider interlibrary loan quite so much. We are dealing not with simply the concept of exchanging finished documents. For libraries I think in small language areas, and I think maybe our Danish colleagues and Swedes feel the same, but we are producing in several languages. English is the primary foreign language. We need mechanisms first of all whereby we can check the catalogue entries; whether a book is available, where it's available. Secondly, whether it has been converted into an electronic form or an adapted form.

KURT CYLKE: Well, that of course exists and we offered you that. You can do that today.

RICHARD TUCKER: Sure. That's part of the sequence. The sequence then logically goes onto exchanging documents. We are all trying to reduce duplication of effort and we know that duplication of effort goes on and it's very expensive. It may be only a small number of titles but even saving that amount of money is going to be useful.

Also, if we are dealing with not just audio books but all the adapted forms we deal with, the ability to exchange the full, complete digital file for a document and then convert it to the standards used locally -- some people use Grade 1, some people Grade 2 Braille so we need to exchange the files for that.

KURT CYLKE: No, no. I understand that. I think I understand the need, yes.

RICHARD TUCKER: The sorts of things which CNIB already have, you are already linking onto PICA for your -- we can do the link back through. The Dutch libraries are going over to PICA most likely. We are part of the international networking and the people who are involved in that have been running projects on electronic document exchange, high speed exchange. We need to pick up on all the work they have done rather than inventing wheels ourselves, and that's what I was suggesting. What I have got at the moment is ---

KURT CYLKE: I just wanted to ask you, to the purpose of exchanging it within your country?

RICHARD TUCKER: No. For us, getting the file or if the book has been produced, from wherever rather than doing it again ourselves.

KURT CYLKE: No, I understand that and I was just throwing out a thing saying that that's very interesting and we should follow it. But would that be an area where we would put a great deal of interest or effort at this point? Because you can identify the book at this point and you can actually get the book to you within 24 hours, which is probably faster than most people want.

All the studies that I have read say that the book gets there and the guy either doesn't use it or he doesn't really want it or he wants it next week. The speed is not there but the technique is there right now. In other words, you can identify the materials. You can avoid the duplication and we are doing it right now. And you can deliver the book overnight.

Now in the future it will probably be very, very interesting to do this electronically and so forth and it will be very interesting to people who are interested in that kind of thing. But from a practical purpose would we put a lot of effort into something which we don't really need now?

ROSEMARY KAVANAGH: I have a comment on that. I think there is value in it, but we talk about document exchange and interlending and so on. But really what we are doing is copying files from one destination to another, and that brings up a whole other problem which has to do with copyright and how we are distributing these things. The last IFLA conference I was at, they had a committee looking at that whole business of exchanging electronic documents and the problems surrounding that. That might be something you may want to ask them to pursue and to come up with some kind of strategy and mechanism to do that.

Sometimes though, I don't know that the mail or just sending it overnight always works that efficiently. I can understand why people would want to get the electronic files. But it's way more complex than just simply moving ahead on it. Bibliographic data is not a problem and more and more the facilities are in place as you mentioned to get access to that, and certainly we are involved with that. But when it comes to actually transferring the electronic files, I think there are a whole lot of other issues surrounding that.

RICHARD TUCKER: That's one of the reasons why it just might be looking at the work that's being done in the library world in general, but also in the information engineering, information telematics program beyond the library. Because their people have precisely the same problems and need to change documents, exchange documents. There are collectives far bigger than the IFLA collective looking at copyright issues, about things like identifying documents, putting electronic thumb prints in.

There is a whole range of issues which affect us, being done by people who are both within the library world and that massive world of document exchange outside.

We may be able to pick up some pointers and all I was suggesting is that the first step is, we could circulate to you the summaries of the projects that have been done in the first three phases; that's from within the last six years or so, all projects that have been completed, the summaries have been issued by the European Commission. We can get those around to you on paper.

ROSEMARY KAVANAGH: Yes, but I think it's important that we identify the appropriate section in IFLA that's handling it. Because let's not assume that it's a section for the blind that's doing it; it isn't.

RICHARD TUCKER: No, it's not.

STEPHEN KING: Nearly all of this stuff is being done by other people, but there are also technological implications of any storage system, how they are going to store video books, talking books, in our libraries and what medium are we going to store them and all those other things. For example it occurs to me that if one wants to go down this road shipping books across the network and hugh files, there is work going now shipping hugh files, picture files and show files and all sorts of other work going on in that areas, storing hugh chunks of information. So it would be worthwhile us finding out what's going on in the area before, as you say, we spend a lot of time ---

KURT CYLKE: Oh, I have no problem with that.

STEPHEN KING: We spend a lot of time in this area and it's high technical. We want to find out what other people are doing and see if there is something else that we could hook on the back of to help us.

ROSEMARY KAVANAGH: Somebody mentioned the spy business. In fact they do move around hugh amounts of audio files. And if somebody could get a contact within that industry, we would probably learn a lot.

JOHN SIMPSON: Certainly in our part of the world there is also a lot of work being done to transfer audio video material for production material. It's not unusual in Australia now for the raw material of a T.V. commercial to be shot in Australia, sent by fiberoptics to Hong Kong or somewhere else for post-production graphics work, and sent back in electronic format. I mean, certainly in our context and between us and New Zealand, there are possibilities in the not too distant future for exchanging talking book material in that sort of format.

RICHARD TUCKER: Could I just add one other point? I take your point about is it necessary if we have got other means we can post things. There is a discernable trend happening with the libraries for a certain client group, for the computer using client group which is a minority -- it's a growing minority but it's still a minority of our clients -- for them to push the adaptation of the document further down the line towards them. So that they are getting a digital file and making their own decisions about how much they use voice synthesis, Braille reading; in this case if it's an audio file, you listen to it. But from around the world you see the wish for certain of the clients to remove the reproduction away from the central institution and down the line to the client. If that trend is going to increase, then we need to have these technological means to do it.

JUDY DIXON: But I think there is going to be a role in the coming time as print documents or documents intended for print are more and more now being found in formats that are either inaccessible or difficult to access, such as PDF or something like that. I think there is going to be more and more of a role of libraries for the blind to get involved in that kind of document delivery. Because it's going to become an access issue as opposed to just simply, "Gee, the world is doing it out there. Blind people, the computer using blind people don't need the library for the blind to help them with this." I think it's actually going to turn back on us and in the reasonably near future if not already, we are going to need libraries for the blind to help us with this.

STEPHEN KING: It's going to be even more complicated than I thought it was. It is not as simple. We have all got so much to read everything is passing us by. We should circulate some summaries of what's being going on so we can just keep an eye on what's going on. I am vaguely aware that quite a lot been going on in the telematic program and the libraries program within the EU. But I am not fully aware of all the things that has come up.

KURT CYLKE: Let me throw this into the conversation and we will go right back to in just a second. One of the things that has bothered me for many, many years has been -- and I am going to talk about the audio book and the narration of the audio book and the accuracy of the audio book. How many people in the room actually peruse audio books narrated? I mean how many libraries? Okay. Do all of you use monitors? I mean word for word monitors and full correction?

SUSAN SEIDELIN: No, not all the time.

KURT CYLKE: The point I am trying to make is, that's one thing that we have never really talked about and yet, you know, the old thing in the early days of the computer, garbage in, garbage out. When I started and not being a blind person, reading some of the technical materials especially -- Judy, you know, the text books and so forth -- I was finding grotesque errors between the print and the audio; I mean absolutely grotesque and swerving them off and so forth. And it's none of you in the room, by the way, but I mean there are libraries -- and then you would say, "Gee."

And then when I went around the world so to speak and looked at the various studios, I knew the answer to the question I just asked. And that has really been bothering me. Because while we are here talking about the machine and I am the guy who wants to talk about the machines and so forth. But the thing, forgetting about the synthesized speech or forgetting, you know, the automatic, you have got this human thing which we really have never addressed on a national basis. And maybe one of the things you want to put there, the first thing is how do you set up so that a library standard is that every book be monitored and double-monitored before, you know, it leaves the studio? That would be a gigantic step forward.

There are other things with libraries of our volume, and this sounds like a very simple thing. But we find that if we don't re-examine, take out and rewind every cassette book, and we do 23 million of them a year, circulate 23 million books; if you don't examine every single one every single circulation, you are circulation 14 percent books that are not good for people to read. There is a 14 percent error rate right across the board. And I would suggest if you are not doing it -- I don't know whether you or not, but it would be easier maybe because you have a smaller amount, but you are sending out garbage to people that they can't use. They are just unusable.

Now those are basic things like how do you put on a neck tie and how do you get your undershorts on in the morning, I understand that. But I think we ought to start talking about that too. Because it distresses me -- not distresses; I don't mean to be inflammatory. I am not even really that concerned. But anyway, to worry about the -- we are talking maybe two people in the world, it may be in the long run a hundred people in the world, for the data transfer of the books. You really are.

You know, when you go some place and you say, "How large is your student library?" and they tell you eight people, eight users. And then, you know, I am not going to -- I understand Mary. I am not going to write it down or anything like that, but we have to put it into perspective. If you are talking about, you know, the great number of our people use the libraries for things where the book could get there 24 hours later. Is that correct? I don't think anybody is going to argue about that. Or the next week. So with the interlibrary loan you can do that and then keep an eye on it. I wouldn't say don't keep an eye on it, but let's not pioneer and break in that area.

ROSEMARY KAVANAGH: You are saying that there are some very practical things that you have to address in terms of the volume end of it and so on, and I agree with that. But I think the problem for the very few that you might have to arrange to interlend, the amount of effort around that can be really quite costly. And I think that's what all of us are addressing.

I also think it will increase because there will be greater opportunities for us because we are becoming more and more a global village, to reduce the amount of duplication. And certainly when we start having to deal with, and it's something that we at the CNIB Library for the Blind are avoiding because we don't have an immediate answer to it, is the aging of our multi-lingual community and the fact that as they grow older, they want more materials in their own languages. Those are the opportunities for more and more exchange throughout the world. I don't want to have to start multi-lingual collections in 15 different languages at all. And therefore if we can have those kinds of links, it's going to make it that much easier for us to deal with.

SUSANNE SEIDELIN: When I think about the interlending system I am thinking about ordinary users. But maybe it's more natural for me coming from a non-English speaking country. Because we have borrowers in our library who have books from England and Sweden and Norway. Because there is no need to produce books for us in a foreign language when we can go into France and get the book. And that's why I think the whole interlend use is very important also for the non user. I am not only talking about the student and exchange of electronic documents, but also normal exchange, normal interlending system within the library.

KURT CYLKE: I understand that and that's what I say too. But I am just saying today, you have

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access to 15 million copies of English language books which I would guarantee would be there within two days. And I think that probably your average reader doesn't want it any faster than two days; he or she can hold their hands for Huckleberry Finn for two days, okay, if she can guarantee she gets it in two days. And you can do that all over the world right now.

JUDITH DIXON: Rubbish.

KURT CYLKE: It's not rubbish. It's a fact. We do it every day of the week. We do it by the thousands. Now maybe to Australia it's three days. You put it on an airplane and you send it.

RICHARD TUCKER: And in Europe sometimes, even express mail and courier delivery, sometimes it will take three days into Italy even from ---

KURT CYLKE: Well, maybe America is different. I mean, in other words anything I can send, I can send to Rosemary before -- I can mail it by five o'clock at night and she would get it before noon the next day anywhere in the United State or Canada.

JUDITH DIXON: I don't think the point here is whether it's one day or three days.

KURT CYLKE: No, it isn't.

JUDITH DIXON: And I think we are really mixing apples and oranges.

KURT CYLKE: We are.

JUDITH DIXON: When we talk about interlibrary loan, you know sending Huckleberry Finn to somebody so they can have it next week is one thing; fine. You send it in a cassette version and the person takes it, uses it one time, sends it back, it's over. I think the issue really has more to do with acquiring books for your permanent collection. And then there would be some significant advantages in sending it electronically ---

KURT CYLKE: Well, that's -- excuse me.

JUDITH DIXON: ...in fact we have electronic files which brings up the whole issue that Rosemary raises, which is really critical to the whole discussion.

KURT CYLKE: Yes, but let me cut you off, Judy. That's why I asked how they defined it and they didn't define it that way. We are not talking about that. They are talking about interlibrary loan, which is Huckleberry Finn. If you are talking about an exchange of books to build into collections and so forth, that's an entirely different subject. I mean, the term interlibrary loan is a ---

JUDITH DIXON: It seems to me that is what it is.

KURT CYLKE: No, that's fine. If that's what it is, we have been misusing the term. But let's understand it and then talk about that, and then my whole thing will change. I mean, I would take an entirely different position. But interlibrary loan is for the librarians in the room was very clearly defined and I think everybody understands what it is. And you know, it's the lending of a book.

The other thing in the area of interlibrary loan that they have learned in the print world is not very efficient, not very effective. Because what you are sending is a book and the person doesn't want the book necessarily; the person wants the information which they think is in the book which in -- I have forgotten what the percentage is; in 90 percent of the cases isn't in the book. So whether you send the file or the book or whatever the heck it is you are sending, it's useless to the person who gets it. And it's a very high -- do you know the figures? There is a very high percentage of that and that's another matter entirely. In other words, what we are talking about if we are talking that is replicating the print system, the mail system, which for technical information doesn't work. It's not useful.

ROSEMARY KAVANAGH: Well, that's just

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because somebody isn't doing their actual homework in terms of defining exactly what kind of information is needed. Because you are right, there are many other sources to get that. But I think it's true that you are mixing apples and oranges; nonetheless, there are still two problems that need to be addressed in that context.

CLIVE LANSINK: Well, is it more than that we are talking about looking at ways of electronic transmission of talking books, no matter what the reason or the purpose. Because it seems to me that the one point that is becoming increasingly important in some countries of the world is the hidden subsidy on the cost of mailing these things that comes through every free post.

Now certainly in new Zealand and Australia this is becoming more and more seriously questioned. Obviously it becomes a matter of advocacy. But it may well be that in the future when it comes to looking at the economics of electronic transmission of books right to the home, that you need to take into account the fact that the cost isn't free. Somebody is bearing the cost of mailing that book and it may well be cheaper in the long run to be electronically delivering it rather than physically delivering it to talking book player.

Now I don't know that it's the most

important topic at the moment, but surely we need to start thinking about how that kind of information can be transmitted electronically no matter what the reason, whether it's between libraries, whether it's to the consumer, whether it's a magazine or whatever.

KURT CYLKE: I would personally not disagree with that. I would say in the States it's not hidden. I mean, the figure is widely published and widely used and attributed to the program, and I can tell you right now it's $46,500,000 a year to send the books back and forth and the machines, and you circulate 23 million books and about 180,000 machines. And you do the division and you know, you know, you can come up with it.

CLIVE LANSINK The problem in New Zealand is that loan, there are people who would like that bill to be actually going to the service. And once that happens the service which is largely charity-funded may well go bankrupt. I mean, it's not likely going to because there will be some advocacy to counteract it. But you know, really the actual cost of mailing the materials we are talking about could be more than the cost of running the service. It is essentially included and has to be paid by for the charity involved, which is the case of New Zealand, then you are looking at a completely different economics.

So all I am saying, where I am coming from is just to say that I think that at some point we are going to have to look at the different methods of electronically transmitting talking books. And it doesn't really matter to me what the reason for doing that at any given time, it is just finding methods of doing it.

KURT CYLKE: For the purpose of the "interlibrary loan" or from one library to another for its collection. You are not saying to the individual are you, or are you?

CLIVE LANSINK: Well, I would say that that's part of it as well as far as I am concerned.

KURT CYLKE: Well, my point was that we were here to talk primarily about the -- or I was -- the machines in the future and what do we know in the playback, you know, for the consumer. And then the logical thing is, what are you sending around? And I am suggesting that the most important part of the thing, equally important, not most important, equally important is the audio voice that's sent out, the accuracy, the artistic level and so forth and so on. And that might be an area to address. Because without that you haven't got anything.

JON ISAACS: That raises another question, which I was going to raise later. That is, this whole business of performance standards across the world. I mean in terms of the issues which Stephen addressed yesterday which we haven't discussed which I would like to see at least some start made. He talked about studio performance, ending methods, correcting methods; all of that. There are a number of things we can learn from each other.

MARY SCHNACKENBERG: I would just like to comment that the international environment changes to human rights legislation. New Zealand has moved to the education system, and I think Australia is moving and other countries are moving. It's only a matter of time before consumer sues production agency. And says, "I didn't do well enough on the exams and the reason is various inaccuracies." I don't consider that funny because there is a consumer who is using inaccurate material. So, you know, if we don't come to it one way, we may be brought to it through the courts. And I hope that doesn't happen, but look out because the international legislation is bringing us to that point soon.

ROSEMARY KAVANAGH: I agree, totally agree. Because this is something we deal with in Canada all the time. And recently as a matter of fact, one of our largest customers whom we transcribed for for educational purposes, didn't want us to monitor their books. And we were very concerned about that and so as a result of that, what we have been doing is putting a statement right up front at the beginning of the tape that this is an unmonitored recording. They were a little uncomfortable with that but we said, "You should take the responsibility for it. You let your students lobby you. We won't take the responsibility for any inaccuracies at all. And we hear that all the time from a lot of blind consumers. "As long as we can get it quickly, we're satisfied to have it." But believe me, when the line of ingredient is missing out of that cook book, you hear about it.

MARY SCHNACKENBERG: But you would be liable at home too.

ROSEMARY KAVANAGH: Well, maybe. But I think what we do need is some standard somewhere that exerts pressure on other people to abide by it.

KURT CYLKE: Now this leads me to say that that's not the prerogative necessarily of this group. And that's why yesterday I was suggesting that it be IFLA. Euclid raised a very reasonable point, that there wasn't a heavy consumer involvement in IFLA and then that left me with, you know, a conundrum. Do they meet jointly with the WBU or is it not IFLA, is it the WBU where these things would come about. I think our contribution, I mean there were people who are from IFLA in the room here, and the lady in your library was going to be the president of the group and Hiroshi was the president of the group -- I think I am speaking enough over the day so that they can understand what I am saying, that I think that they should take a proactive stance in many of these things. I mean, it has been in existence now for 15 years and maybe they are the group who should as you say, you know go there.

Now you can't mandate those standards. But what we do in the States with the libraries for example, we identify them in a very nice way all those that do examine books and all those that don't, and we publish it. And we publish the failure rates for the consumers. So that in New Jersey they know, and in New York City they know, that 14 out of every 100 books that they get will not be readable. And it's not our fault. Now the answer comes back, "We haven't got the money to do it." That's the first answer. You can't have the money to monitor. I would suggest to you you have to, and it's better to do fewer books but have them accurately done than none.

STEPHEN KING: It appears to me and I have been writing down on my pad, because there is quite a lot more topics. Accuracy is another topic and we can talk about what forums might be to take some of those forward. The proposal I was making was much more simple than that. But that was just to sort of get some information out to the people who come here and are interested. But I totally agree that if there actually is a role personally I really think it is for IFLA to take, and I will be thinking about this when I talk to my other colleagues who are within IFLA to try and organize that. There is a consumer role in this and I think there is a role for another forum to take some of this forward and actually try to get it. But I was just trying to get some benefit out of this particular meeting and actually get some information sharing on the road in some of these areas.

ROSEMARY KAVANAGH: I think it would help us if a body like IFLA did establish some of those standards so that we could cite them, again to other people. And I am part of IFLA as well. I have no difficulty in saying or insisting at IFLA that some of these issues be topics that they consider and do some work on. We have got electronic transmission of data or books in audio format -- we have the business of interlibrary lending. We have document transfer for production and copying purposes, and we talk about performance standards for audio Braille or other alternate format products. Those are key issues and they should be addressing them.

STEPHEN KING: I was hoping to bring us back and ask if they whether they would circulate this stuff to us. Anyway, when we talked about this we have seen some ways to presenting, structure it maybe. When you go on to sort of electronic file talking audio books, one of the driving forces that has driven us as an organization to look at that issue, to provide this cookery book, gardening book, religious text, but how do you actually present that? To me, to be honest the technical way to get around that are quite trivial. But actually the ergonomics of how does somebody find the chocolate cake in a cookery book is actually quite challenging, and we actually need to start to do some work in that area. We have got for example a physiotherapy book and that's all fine.

KURT CYLKE: Do you do any voice indexing or sound indexing at all in the production of your books now?

STEPHEN KING: For our student books, yes.

KURT CYLKE: But not for the others?

STEPHEN KING: But not for the other books. But there is quite a lot of, for example if you search the computer industry that when you go down a structured file, the people can understand the first level and about 50 percent of the people drop out of the second level, going down a structured tree, you know by the third branch down, they have completely lost their place and how they have gotten there.

ROSEMARY KAVANAGH: That whole business of indexing is a whole other skill by itself as well. Apart from the technical business of how you get it into the audio format or whatever, the intellectual concepts that are involved is something again that ought to be a concern of the library profession. That's what they do.

STEPHEN KING: We actually need some people doing some research, actually presenting this and get some evidence. But you have got to start with the consumer, how do people interact with these things, we have to build a system to deliver it and then we will find out how to use it.

ROSEMARY KAVANAGH: Well, there is a lot of expertise in the world in terms of that. That's what all those data bases, electronic data bases are in terms of being able to retrieve information from them. They are indexed and they are organized in some kind of a logical format.

RICHARD TUCKER: But there hasn't been a great deal of research done on how blind people, particularly the distance on telephone, are using audio indexing. You know, the thing talks back to them. There has been some; we cited some in the documents. But they are relatively small scale. But they all come to one conclusion, is that people get lost very, very quickly.

ROSEMARY KAVANAGH: Yes, we know that.

RICHARD TUCKER: A tree of nine items leading to nine is for the sighted person listening to an audio I think it's impossible; it's too long. For the blind who is perhaps better trained to listen, it's right at the margin there is about six or seven items. There are very limited trees there.

ROSEMARY KAVANAGH: I was going to say, it wasn't unique to just the blind population at all. Sighted people have difficulty with those telephone answering systems for that reason.

RICHARD TUCKER: Yes.

CLIVE LANSINK: Maybe that applies to the kind of first attempt to become familiar with an index structure you probably can find your way through it more quickly right now.

RICHARD TUCKER: Yes. The evidence from the French study was that people who used a particular section of an index went to that section very quickly.

CLIVE LANSINK: They may have taken several times to learn how to do it.

RICHARD TUCKER: They quickly learned the chain of numbers to get down to that. They then faced precisely the same problem when the following day they need a book which isn't in their subject.

STEPHEN KING: All I am saying is we can get into the discussion. There is quite a lot of work before you can design any sort of player, we need to think about how you present it. It may well be that you can't. And if you can't present it I don't know. But now we have a platform that we can run some trials. Potentially we need to use this platform to try out different types of presentation and different types of books. You know, is it possible to present a cookery book, is it possible to present the bible or some other religious text in this way. How people will go and look up today's reading of the bible, and anything else that people want to do. Some of us have now got some of this system but all I am encouraging us to do is let's not all attack the chocolate cake and the cookery book. I will do the cookery book and let somebody else look at religious text and let's just share that information and see what conclusion that leads us to. Because that has huge implications for a player designed later on down the track.

JOHN COOKSON: I can't resist the idea of maybe trying to track on a voice control mechanism there to see if that relates at all. I might do that.

Would you want volunteers for topic areas?

STEPHEN KING: Well, it seems to me that would be one way of doing it. Just say, you know, if we are going to look at cookery books and simple things like that, you know, you look at religious texts or ---

JOHN COOKSON: I was thinking of other areas of technology though. Like for example audio coding technology and variable rate rendition. I would be pleased to ---

STEPHEN KING: Well, that's exactly what I have written down on the pad, compression system, audio rendition, speeding up and all that. You are already involved in that so we will let you stimulate us and get us information in that area.

INGAR BECKMAN HIRSCHFELDT: Can I ask if anybody in Canada want a copy of our program?

ROSEMARY KAVANAGH: Of the Daisy?

INGAR BECKMAN HIRSCHFELDT: Yes.

ROSEMARY KAVANAGH: Yes.

KURT CYLKE: Of what? I didn't hear that.

ROSEMARY KAVANAGH: Of the Daisy system.

INGAR BECKMAN HIRSCHFELDT: And Australia?

JOHN ISAACS: Yes, please.

INGAR BECKMAN HIRSCHFELDT: New Zealand?

CLIVE LANSINK: Yes, please.

ROSEMARY KAVANAGH: So are you seriously then, Stephen, looking at people actually toying with the system per se as an indexing system on particular topics or whatever? I mean, I just jokingly said to Lynn Leith who produces the Canada Tax Guides, "Hey, you could try it out on that."

STEPHEN KING: I think within the system somewhere around there is -- yes, do a tax guide and see how the presentation works, and how does it work just following the context of the tax guide. And then get some users to see how they actually find their way around it.

So that was sort of ergonomics and presentation and structures we need to know. Then we talk about recording procedures and what goes on. Because we need to get some information about what the costs are, don't we? We need to sort of understand. I mean, we know what we are doing now and we know what it costs us. We have got to start to get a view of, if we move into digital recording, recording instructive methods, trying to structure the information, what does that do to the technology? Are we going to use the skills? Are we going to use it to train? Are we going to use the productivity that we have got, so that we can actually get some decent cost models. I guess we would learn if we were all trying to use -- you know, if we are all going to try to record some books, we will all start to get some information on what that might be.

If you look around the world, we are all using slightly different recording methods as well. We use two different, entirely different ones, and we have seen a different one in Canada. But we need to understand what the cost implications are of going to a new way of recording. Because without knowing that we can't actually say, "Well, can we afford to go down this route? What are the costs and the benefits?" So if you are volunteering to moderate then I think all of us will start to gather some information.

EUCLID HERIE: Just the one thing I guess, just a throwaway thought from me when you talk about this meeting and its value, and I want to come back to standards in a minute. Mr. Cylke sort of raised we haven't used the word standards so I guess I am back to the airline pilots and somehow if you are going to get people around the world by the million, you have got to have standards.

The one thing that I find very helpful in this kind of forum, and I see this more as a forum than a formal meeting, is the fact and the fiction element. Because all of us in leadership positions and dealing with governments and dealing with, for that matter, our employers and our funding bodies and so on, is trying to give some good advice.

My life was in Human Services until I joined the blindness business 15, 16 years ago. And I guess I am still getting an education in this field. But one of the things that I have always found very difficult is the element of hearsay. And what I have found sometimes is that I have been in Ottawa telling the government something -- it could be on library services, it could be on copyrights, it could be on rehabilitation; it could be on a lot of other things -- and then when I go to Australia or to France or to Washington, I get a whole other education. And then I find out that what I have been telling them has in fact been fiction.

That happens in my own organization, by the way, and no disrespect of Rosemary who is a very competent colleague. But you know, sometimes I am talking to people about something and I have an impression that we are doing something. Then I find out it's really not what we are doing.

What I think has been very useful for me in these three days is that I feel at least a representative sample of people in this field, the level of knowledge and experience and as Mr. Cylke said, in terms of capacity and productivity. You know, it's not likely that some Eastern European country is going to be in the position -- and not picking on Eastern Europe, but to be producing things in the next little while although they -- you know, things of that sort.

So when you ask the question, I find it's imminently useful to be able to say "Yes, that's what we now understand to be the case." And you know, I am listening and I have no idea how you sending the talking book electronically, but I guess you can do that the way you send television programs. But the main thing is that I am happy to know what the status of where the research is going, what the status of playback equipment is likely to be, cooperation on standards and so on.

The other little soap-box item for standards, because I think it behooves all of us and I have been thinking about it this morning as I have been listening to quality. And as a consumer, it's extremely important. I am not so concerned about certain things that don't have quality in an ephemeral kind of a way. They would never print a newspaper I am sure if it was accurate. But I truly believe that we have an obligation in a way, and the short version of the story is this.

We in Canada as you probably know from your tours and so on, that we produce French books in Montreal and we also have a protocol now with the French and we are about to sign one with the Swiss. So we will have sort of the access to 10,000 or 12,000 or 14,000 French titles such as they exist in audio. We don't produce that many a year. But we were dealing with another rehab agency that had produced in somebody's house a whole bunch, about 1,200 titles on two-track.

We took them in a great fanfare of our 60th anniversary party in Montreal, and we started circulating them. We found out that (a) most of them couldn't be duplicated because (a) they didn't have copyright permission. Secondly, they were really junk. They were recorded in people's basements with dogs barking and all kinds of stuff.

Anyway, we circulated them for awhile and in the final analysis we thought, "Well, this is a losing proposition.", so on and so forth.

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So the thing that we did was -- well, we were going to give them back to the agency. And they said, "Well, we really don't want them. Let the Montreal Public Library have them." They really didn't want them. Well, we didn't know what to do with them. And there is always this reluctance in this field to throw garbage out.

I heard from Stephen said about RNIB trying to sort your collection down from 80,000 to 50,000. Maybe it should be 20,000; I don't know. You know, I look at our place. I mean, you probably didn't see the archive tape room we have in the back. I visited it a couple of years ago. I hadn't been there and I said, "Throw them out. Who the hell is going to want anthropology written in 1936 unless you..." -- anyway.

Well, what we did with this collection you see, is because no one would throw it out, we have now given it to the Haitians.

KURT CYLKE: You did that with Clarke and Smith.

EUCLID HERIE: No, they were in Trinidad.

KURT CYLKE: Well, now we know who to avoid.

EUCLID HERIE Well, that's the other story. You have to hear the rest of the story. But you see, poor old Haiti, first of all we were not sure if they have tape recorders. But we have given them this now and, you know, if we are trying to help some country improve its cultural intellect and accuracy and everything else, what we have done is basically given them junk. Now I guess the choice is ---

KURT CYLKE: Why did you do it?

EUCLID HERIE Well, that's what I am asking myself. And you know, this is my point, you see. I guess it's the attitude that if you load a plane full of old clothes like people do commercially, you say "Well, I guess it's better than nothing." But we really have an obligation. And as I am telling you this, that's right, I have been struggling with this -- I have been thinking about this for a month now and I am thinking, "I don't know why we did that."

It wasn't ours to give away in the first place, but no one wanted to destroy it. And it was the same thing when we gave up the Clark and Smith in '78. I was just new in Manitoba and they made us go through this thing about, you know, upgrading the machines and getting all the good ones and overseas book people packed them and we sent them to the Caribbean. And 10 years later I am back in Toronto; it's now 1986; I am in an annual meeting of the Caribbean Council of the Blind in Grand Cayman and they say to me, "About those Clark and Smith machines." I say, "Yeah, what about them?" Well, they said "We'd like your permission to destroy them." And I said, "Oh, really? You haven't been using them." And the guys said, "Well, you shipped out..." -- I don't know, about 10,000 of them. There was a lot of them. They went to a warehouse in Trinidad. (a) they weren't adapted for the kind of electricity they use. Secondly, nobody could afford, most people didn't have electricity in the Caribbean and in many cases still don't, and the machines rusted in a warehouse.

I had to go back to our national council because this was done at great expense and effort. I don't think anybody asked the question. And my plea is as I am saying is that the value of this kind of forum and exchange of attitude is, if you think this is of import, think of the cost implications, the time, and whether we as, let's say so-called industrial nations and you as leading librarians in this field in the world or whatever you are, technicians; all I am saying is, it's sure rather useful. I once read an ad by Oglivie-Mathers that said that while it is true that a blind pig could root truffles, it's very helpful to know they grow in the forest.

STEPHEN KING: We ought to try and persuade an organization like IFLA to take accreditation and standards, and I will just try to summarize the words that we have talked about. The whole business of trying to agree for a file format and what have you.

KURT CYLKE: Who is the appropriate person from this forum to bring that message to IFLA? Is it Hiroshi or is it Rosemary?

STEPHEN KING: As I understand ---

KURT CYLKE: Okay, that's fine. I am sorry.

EUCLID HERIE: When we talk of IFLA are we talking of IFLA or are we talking of the round-table library sort of way.

KURT CYLKE: That group, that blind group.

EUCLID HERIE: Yes, probably. Because I don't see them as the same but I think I might be the only one in that position. I don't think they are the same at all. But maybe they are.

ROSEMARY KAVANAGH: They are a subsection of IFLA, the Libraries for the Blind.

EUCLID HERIE: Does IFLA know that?

KURT CYLKE: Oh, yes.

ROSEMARY KAVANAGH: Oh, yes. They are part of IFLA, yes.

EUCLID HERIE: I was just trying to wake everybody up.

KURT CYLKE: The other thing is, Euclid's point of yesterday of more consumer involvement. I don't know how you do that; I don't know that it can be done. But we certainly should take some note of it.

ROSEMARY KAVANAGH: Well, I think that can be done by just having IFLA, whatever they would come up with as a recommendation in those areas, presented to the World Blind Union for their support or endorsement or something whatever. Good communication.

JUDITH DIXON: I think you may need to go further than that. I am very comfortable with the IFLA librarians sitting around and talking about some basic tried and true things like, "We should have monitors.", and some things like that. I am not at all comfortable with them sitting around and discussing indexing methods for audio books.

I don't think that it's reasonable to go to other sections in IFLA where librarians have worked at indexing methods for print and for sighted people because I think the issues are very different and the need for indexing and the appropriateness of it are different. And I am not at all comfortable with a group of sighted librarians sitting around and making those kinds of decisions.

I mean, taking it to WBU is one thing. But WBU is primarily a political organization. It's not so much the nuts and bolts of -- these people were not elected to WBU because of their expertise in indexing methods. And I think we need to go back to the consumers who have substantive knowledge and interest in dealing with these things and provide us with some good and useful feedback other than simply a rubber stamp on whatever it is we decide to do.

ROSEMARY KAVANAGH: The two are not inseparable. You can go, because that's what librarians are in the business of doing, is organizing knowledge and indexing stuff. And they do get feedback from the consumers and ought to. And if it's a requirement, it's a requirement.

LYNN LEITH: But indexing requirements in terms of an audio production are very different than indexing of ---

ROSEMARY KAVANAGH: Well, we know that. But that's on the technical end of it. But people who are looking for -- well, I can tell you the guys who come to the Information Resource Centre don't ask for anything different than the other sighted population. The question is, how do you organize that within the audio environment? That's the issue.

STEPHEN KING: It would appear to me that there is some general agreement in this room as to the actual method of engaging the consumer organizations and the political level as well as, because I think, I mean certainly I can only talk about our organization. But everything we are going to do has to involve varied and detailed consumer research. You have got to start from that end and look at, and make sure that any recommendations and conclusions we are coming to is driven out of actual consumer research and actual consumer experience. But at the political level, if there is going to be any endorsement of any recommendations coming out of IFLA or anywhere else, people have got to be convinced that that's what is being done, that the recommendations do come out of the proper research and not a group of sighted librarians sitting in a room dreaming something up. And therefore it does appear to me that there is a need for some forum and I don't know what it is at this stage and I don't, I am not sure.

ROSEMARY KAVANAGH: I am just saying that they exist in spades across the world because there are people who are spending their time organizing and indexing information, and the same thing applies to the consumer. Some of this is very technical and you can't always expect the consumer group to have that kind of knowledge. They can tell you what they need; they may not know what the solution is because they are not working intensively in those areas. So it's a combination of the two. And librarians do do that.

JOHN SIMPSON: That is where we have the problem arising.

EUCLID HERIE: That's exactly the problem.

JOHN SIMPSON: Because if IFLA does not open its ears to hear what blind consumers or the library section of IFLA does not open its ears to hear what consumers want.

ROSEMARY KAVANAGH: Well, if that's a problem ---

JOHN SIMPSON: You can't get one without the other.

ROSEMARY KAVANAGH: We totally agree. And if that's a problem that's missing -- there are lots of problems with IFLA. They are not addressing right now any of these key topics. That's a section on the blind that isn't. But I know that there are other sections there that are doing pretty intensive work in other areas. And the problem I see is that the section for the blind maybe does not often make use of those other connections within IFLA to bring some of those things together. But getting the consumer together with the people who are designing their systems is not a problem if people insist on it happening.

EUCLID HERIE: Well, on the design of equipment thought ---

KURT CYLKE: It seems to me -- oh, okay. Yes. Sorry.

HIROSHI KAWAMURA: I am chairing the IFLA section for the blind, this is my responsibility to describe how the section of the blind of IFLA is working. There are 32 sections within IFLA umbrella; 32 sections. And the section of libraries for the blind is one of those 32 professional groups of IFLA. And talking about the official connection with World Blind Union, there is a committee on literacy of the World Blind Union. We have been officially contacting with this World Blind Union specialized group. And there is a joint committee on copyright, joint with that committee on literacy. And also there is a proposal from the World Blind Union to hold a world symposium on literacy to be held this autumn, maybe this autumn or the end of the year.

We have been contacting with World Blind Union to get the involvement of consumers, and so far, as far as I know, since 1993 we have joint meetings in Barcelona and in Havana last year. And I expect to have another joint meeting in Istanbul this August with World

Blind Union's committee. So in this way we have been working with World Blind Union officially.

As I have been taking part in this very important informative meeting here, as the chairperson of the section I have taken notes on the necessity of international standard for future digital talking book production. So I would like to raise this issue to the next standing committee meeting to be held in Istanbul this October.

Of course we have been not so much successful to get consumers involved in our meeting. But we have been holding so-called expert meeting which is open to everybody who would like to take part in. And the newsletter announcing of the Istanbul expert meeting will be distributed soon to about 350 institutions and individuals all over the world. And you are very welcome to join us in Istanbul. And also, we really wish to have close contact with consumers. Thank you.

KURT CYLKE: Okay.

JOHN COOKSON: Could I make a comment?

KURT CYLKE: Yes, please.

JOHN COOKSON: This conversation confirms my suspicion that librarians and consumers really don't know what they want when it comes to indexing. And so

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it's instructive for me as a technical person to build the kinds of systems that are completely flexible, that have kind of everything on it and so that you can decide further downstream what it is you want. And in a software environment you can actually achieve that kind of thing and you can even use a technique called perhaps rapid phototyping where you build something that you think the user might want and then you show it to them and they say, "No, that wasn't -- don't you understand? That's not what I wanted." So then you go back and in a capable and flexible environment, you can do this and you keep turning it around. And so this serves as guidance.

ROSEMARY KAVANAGH: I agree. I just want to respond to that. That's exactly what we would expect the technical side of the business to do, is to give us the flexibility to create the kinds of indexing systems that will work for the consumers. But again I am going to emphasize, it's not that librarians don't know what they want to do. The profession has been in the business of supporting multi-billion dollar electronic data bases with sophisticated indexing and retrieval systems.

There is a whole world of expertise out there. The fact that we haven't been tapping it is what's weak with us. The problem is not on the other end. We just haven't brought those resources together with the kind of technology that we have. And that's part of the problem that you hear today, IFLA not being in contact with this group or that group or whatever. There just has not been that kind of intensive communication. But the resources and the expertise are there. So what we do need are the flexible systems. But the expertise to decide the kind of indexing and to organize knowledge and information is what the whole profession is about.

KURT CYLKE: Yes?

STEPHEN KING: I think we have got some progress. Because of that sort of original list of things which we have collected here over the few days you seem to have divided that up into things which we are sort of progressing on as producers. And other things which are areas where we need to get some work into a more formal environment such as IFLA, World Blind Union, we need to agree what it is at some point. There are other areas that we ought to, at the informal level or formal level get on the agenda.

RICHARD TUCKER: I seem to have missed from what you are suggesting of areas where we need to a) need to exchange information and b) need to do some testing, development, is actually in the copying. We all know at the moment that you can't high speed copy if you are going on that or anything else. We can high speed copy from simply taking an audio file from a hard disk onto a transportable hard disk and giving it to somebody else, but producing the client medium, the carrier at the end we have got problems which radically change the way we currently work.

We saw your telex machine yesterday copying cassettes, we probably all got something very similar, that is going to disappear unless we find some other high speed copying mechanism. We have been skirting around it for the last two and a half days and nobody has really talked about it. It may be that there are answers being found, if they are can we, please, find a way of distributing the information.

STEPHEN KING: I think, and I am looking at my colleagues sitting next to you, but I think we have done quite a lot of work in that area and are happy to sort of circulate that around.

KURT CYLKE: Yes, but again how high speed and how high tech and so forth. In other words you are doing it in cassette duplication, right? And that is very appropriate, that is what you should be doing. When we produce a thousand copies we do other cassette duplication and so forth.

RICHARD TUCKER: But I mean the technology of high speed duplicating that.

KURT CYLKE: Yes, I understand, and we have to develop that. That is part of the whole system, I mean you not only have to worry about that, you have to worry about the directions on the top of the box, the instrumentation or whatever you want to call it, the packaging, the handling, the shipping, that is just part of the whole system, right?

STEPHEN KING: Yes.

KURT CYLKE: I mean you couldn't do anything unless that has been solved before you start.

JOHN GRIFFITHS: Here we have looked at it quite intensely and we are investigating. Technology is moving very very fast in that area. Obviously if you it is a compact disc there is a break even point, whether you press or copy direct to disc. But we have done the work, we are doing work on that and I am quite willing to share that information.

KURT CYLKE: There are some things that people don't like to talk about and I like to talk about those things. In other words one of the things that is in my head that my people have told me, and I am point to two guys, that the compact disc is very short live, in ten to fifteen year sit wouldn't be here, so why are we worrying about it.

Now, I hear what you are saying, I am not stopping you, but I am just saying I have not one wit of concern about how you are going to duplicate the compact disc and I don't have a wit of concern that you are going to have a compact disc, I think we are going to be in the next technology.

Now, if people nod their head and say, yes or no, maybe my guys are giving me the wrong advice or I am reading the wrong magazines, but if I am not then that is fine. All I say is that you are getting expertise doing what you are doing and we are getting expertise in what we are doing but neither one of us are going to do anything until the next technology comes along. And it is going along at a rapid rate and you will be talking about something entirely different.

JOHN COOKSON: I think the focus here is not on CD, but on just moving digital data in and out of a digital archive. Actually what we want to do is move digital data out of a digital archive and move it on to an analogue format so that we can distribute it on cassette. You know, if you know how to do that just let me know, fast.

STEPHEN KING: So that is another areas

where we can share some information and make some progress.

JOHN COOKSON: Well, the two that I mentioned coding and---

STEPHEN KING: Yes, I have got that one down, coding and compression systems. I have got you down, John, to be our moderator working in that area.

JOHN COOKSON: Okay.

KURT CYLKE: Well, I would suggest at that point let us take a break and come back at 11:15 and we will go on from there and we will go around the room.

JOHN COOKSON: I have a list here of the proposed members of this list serve group and has their name and their internet address. I will make that available. So we will have that available when we begin the discussion during the next session.

---MORNING RECESS:

KURT CYLKE: Just one brief announcement. We will be breaking at 11:45, the lunch will be in the Simcoe room down on the first level. It is hosted by CNIB, it will not be a working lunch but rather a pleasurable affair. Those of you who wish to leave early or whatever you can make your plans accordingly.

You will recall yesterday that several of our associates were going to develop a statement of purpose. Judy were you the person who was going to present it.

JUDITH DIXON: Yes.

KURT CYLKE: Okay. Judy.

JUDITH DIXON: This is very brief and it is in the form of the beginning of a welcome message to a list serve. Welcome to discussions on digital talking books for blind individuals. So the title of the list serve will be Discussions on Digital Talking Books for Blind Individuals.

The purpose of this list is to provide a forum for the exchange of technical information and ideas regarding the production and distribution of talking books based on digital technology. The goal is to foster open collaborative research and to encourage the worldwide adoption of a format or formats that have maximum capacity and provide barrier free access. That is it.

KURT CYLKE: Any comments.

JUDITH DIXON: Oh, I am sorry, that is not it. Excuse me. Topics will include: Audio coding methods, time scale modification algorithms, indexing schemes, user interface and the like. That is it.

EUCLID HERIE: This would be on an internet, or where will it be?

JUDITH DIXON: Yes.

EUCLID HERIE: No one has to pay to put that on, there is no cost for that?

JUDITH DIXON: Yes.

ROSEMARY KAVANAGH: Some of us have to pay.

JUDITH DIXON: Some people have to pay for their internet access, that is usually fairly know.

JOHN COOKSON: Clive has agreed to be the moderator or the manager or whatever.

JUDITH DIXON: List serve administrator.

JOHN COOKSON: List serve administrator. So, at least initially the host computer will be physically located in New Zealand. We have a preliminary roster of persons who might have an interest of subscribing to the list, and that is available to you in print and we also have it on a disc.

I should point out there are some missing information on this list and to up date it or to make your address known you must subscribe to the list via the list serve manager and that would be Clive. So don't send your address to me, send it to Clive.

KURT CYLKE: Any comments? Okay. At this point I had indicated that we will go around the room and ask each individual present if they had any comments or topics they wish to raise or make any remarks at all. Let me start with Sweden in the far left corner of the room and just go from there.

INGAR BECKMAN HIRSCHFELDT: Well, to start with, this meeting is not what I expected, I think I expressed that yesterday. But I am surely very glad that we came here from Sweden and I am also pleased with the reception of our new system, Daisy.

I think it has also been very useful to hear the discussion and to see how different we think in many matters although we work in the same field. I will express some sadness to hear there is a representatives from the users that they are so aggressive to librarians and to IFLA. I think that is a very important task for me to bring home to the chairman of IFLA to make this not be the case in the future.

So I am very glad I have been here and I think it has been a fantastic meeting and in the way of hospitality. I am very impressed of the library of Canada and the hospitality and the fine arrangements. So I must say that I am very happy that we had that opportunity to be here. I will at the same time just, as we do in international meetings I brought a present, a Guide to the Production of Tactile Graphics on Swell paper that I will present to Rosemary as a small thank you.

ROSEMARY KAVANAGH: Thank you very much. It was our pleasure to host all of you.

SUSANNE SEIDELIN: First of all I will like to thank also our host. I think you are very great and your staff has been so good showing us around your institution. I think we had a very exciting meeting, actually, not quite what I expected. I think we have shared some thoughts that was important. We are moving, all of us, towards a new technology. And when I say all of us I mean also the users, so it is very very important that we do not go into any wars together, but that we make cooperation.

One of you said that this should not be librarians only who make the rules of how we structure materials, and I am quite sure I can speak for all the libraries for the blind that we would never dream of doing that, we would never dream of making new structures which is so important for the conception of the materials without listening to the users.

What we are, and I think you expressed that very good, Rosemary, we are professionals and we have a job and we do it. But we wouldn't change anything without the users because we are not making the materials for ourselves, we are making them for the users. So in that concept that is what I would like to say.

As to the technical things, I think we have had some very good discussions, we have also had very good discussions outside the meeting, and that is quite normal, I should say, in an international meeting. I think we have just touched the topics also, quite naturally. We can't solve the problems here but we could go forward. I think from what Stephen puts out actually we should be able to achieve some good things by doing some recording and some new products and some Daisy systems. I hope we can go on also in other forum than this one and I am sure we will have quite a benefit from this internet thing. Thank you.

LARS SONNEBO: I am very pleased to be here. Of course I am very grateful for all the hospitality we have been shown. To me the meeting has been very useful, mainly I must say on the informal front, because I have had the opportunity to meet a lot of intelligent and very nice and knowledgeable people. I have had very good discussions with a lot of you. Well, it is not over yet so let us see what happens.

KJELL HANSSON: I am also very happy to have been invited to this meeting and I am very impressed with the hospitality of the CNIB. It was very interesting to have the opportunity to share our work with you and listen to the actual status on the technical side of the digital book production today. It is very important that you have also decided how to go on from Toronto, do the things about this meeting.

BLAITHIN GALLAGHER: I would also like to thank our host, CNIB for their hospitality. It has been a wonderful few days. It is great to see people getting together and talking about the audio technology of the future.

There is one thing I think that is important, it is important for those people who are involved in the development and research of future audio technology to remember that if the system is to be truly available internationally the end product is, that the cost of this end product must take into account smaller nations and organizations to whom the cost of the end product will be a large consideration in the distribution of talking books to the consumer, who, after all is the most important player in this.

JAAKKO RAISANEN: On behalf of the Finnish delegation I will thank very much Kurt, Euclid, Rosemary and all of you other host persons here. Coming from a small country it is very important to know what big brothers are doing in the world in this area. I have learnt of course very much. I think in the future this kinds of meetings are very good because the technique is speeding so fast ahead that nobody can have a full command of the technology.

I have been speaking with the people of Philips and they confess that we are too big to handle the technique and no one in our big organization knows what you should do in our field. But changing, of course, ideas is very important and also seeing here the marvellous facilities what CNIB have in Toronto, the whole library and all other functions in good condition here in Canada. We can learn a lot of things from here. Thank you.

DOUG KENT: Euclid, I was very interested to hear your comments about, you know, what is really fact or fiction. I think before I came over here a lot of stuff that I was being fed by my staff and hearing around the trip was obviously fiction. We heard an awful lot about what America was or wasn't going to do and what the UK were or weren't going to do, at least now I have got the truth. So a few of my people will be running for cover when I get back home. Or at least some of the truth.

I think that Australia like New Zealand is one of those countries that faces from the problem of distance, and even in the technological age we can certainly be left out on a lot of things. We definitely urge our consumers to keep pace with what is happening throughout the world.

We in Australia don't have an abundant resources or money and we have to make sure that every dollar spent adds value to our consumer services, and I think that my attendance, particularly, as far as my organization is concerned, at forums like this is vitally important because any decisions that the larger world agencies take, especially regarding technology can severely impact on our ability to react in a timely manner.

Jon Isaacs and I, as mentioned on the first day, are about to embarked down the road of establishing a national library in Australia for blind and visually impaired people, and I think that the contacts that I have been able to make here, and I am sure John will say the same, and the experience in this room we will be able to use when we get to the sticky issues of putting this thing together.

Euclid, thank you very much for the hospitality and I really look forward to joining you and your staff for two days next week.

Kurt, thanks very much for the entertainment.

CHRISTOPHER DAY: I would also like to thank our host, and I would just like to make a short point. Let us also consider combination braille and audio study material.

STEPHEN KING: I shall temper my comments. But as one of the original invitees I probably think more formally I should thank our hosts Euclid and Rosemary and also express my admiration for what we have seen when we have been here, because I have to say, going around yesterday and then when we saw the recording studios and what was going on there and seeing the library services and seeing the employment services and seeing the low vision clinic services, I was enormously impressed by what was going on. I have to say I had no idea of the scale of the operations that were going on in Canada, so I have to give you congratulations on what you are achieving here. I am very jealous of a lot of the things that you are managing to do that perhaps we are not.

First of all thank you for organizing it and secondly congratulations on what you are doing, and we want to talk further on some of the things you are doing.

Secondly can I thank Kurt for first of all having the idea of running these meetings over the years and maintaining the communications between us as organizations. And then secondly, and taking the initiative to organize this meeting, and secondly allowing all these other people to come, because I think it was not a shock to me as it was to you that this meeting turned into something completely different, and I think that has been enormously valuable.

Thank you for a) taking the initiative and secondly organizing it, and then third patiently chairing what has been quite a difficult meeting to take us through, a fairly unstructured discussion, but I think we have covered an awful lot of ground.

Thirdly, can I thank all the people who have come here and expressed a lot of views. I personally have learned a tremendous amount about what has been going on in the world that I didn't know before. My views of what we should be doing as an organization both as RNIB and in our other organization hats on, so with my IFLA hat on and with other hats on my views have changed considerably as part of the outcome of this meeting. So thank you all for those contributions and for taking the time to come and participate in this meeting, and thank you also for the enjoyable informal parts of the meeting as well.

I think just one practical point. Given that we ran the session just before the coffee break and actually divided some work up, I would like us to sort of hold ourselves to that. It appeared to me that given that I have got most of that written down on this pad here I should circulate just some action points of what I think you have agreed to to do in advance of the proceedings which are going to get published because they may take some weeks to come out because we would like to see some progress. So, I am happy to take that on myself to do. So with all those thanks I have no further comments as I have spent quite a lot of time talking already.

KURT CYLKE: I am just going to jump in before we get to the next comment. In terms of a future meeting or something of this sort, I will urge you to go back to Sweden, and if you think this has been a useful meeting I think it might not be inappropriate for IFLA to hold similar meetings in the future. We wouldn't be holding similar meetings, I mean we will get together with RNIB and others when we have a need to do so, and right now we don't see an immediate need because of the communication things and so forth, but we will get together in the States in a few years, perhaps and whenever a decision point has come. So, if you wish to continue this I think it is not inappropriate that IFLA will do it. And you should know that they will do that with no feeling of infringement. I am trying to encourage them to do it and I will not do it and I believe you will not do it, I don't know. But anyway.

DAVID MANN: Thank you. At the risk of sounding repetitive, I too would very much like to thank our Canadian host for their hospitality. I don't think they have actually given Stephen any chocolate cake, but apart from that they have given us virtually every sort of food, it has been greatly enjoyed, and at the same time we have been able to get our teeth into rather more substantial topics as well.

At the beginning of the proceedings David Blyth reminded us that we should take account of the millions of blind people to whom these proceedings might seem irrelevant, who weren't literate, who probably had never handled a tape recorder, and that is very true. At the same time we have been reminded this morning not to forget the financial constraints that smaller countries labour under. I thought big countries laboured under financial constraints.

At the same time if we turn our back on the forefront of technology, if we don't follow developments

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which are benefitting the general population we run the risk that in ten, twenty, thirty years time blind people will be using the equivalent of crystal sets and will be left in some sort of technological Jurassic park, so we have to keep the balance between forging forward, taking the best of what technology offers us for blind people and making that available to all blind people. Thank you.

JOHN COOKSON: I have personally been gratified and re-energized by a recognition of a commonality of purpose and direction on the technical level, from a technical perspective. And I have a personal commitment to deliver research results to my management, deliver prototypes, deliver models and what I have signed up for is very challenging and presents a lot of difficulties. While I have been here I have been able to personally identify some sources of expertise and I intend to fully exploit that. And now that I have your name and address you can be sure you will hear from me and I will be asking for your advice and your expertise.

RICHARD TUCKER: Thank you. I will join my thanks to all those who have gone before. I wouldn't use all the words, but please take it that we go along with them.

Kurt I hope that you don't feel that your meeting has been usurped in any way, but it has been expanded positively by what has happened to your original purpose.

What has been most exciting from my personal point of view in relation to the project we have been doing is the feeling that there is a general move towards a common view about production and reproduction and a recognition that we don't need to commit ourselves to any single carrier at the moment.

There is a great unanimity of purpose here, and that, if nothing else, I would like to take away from the meeting. I would also like to join with the point made earlier about the thought at the low production end, i.e., the students end who make the most demands on the technology that we also don't forget the linking of the audio text and the audio signal and the text if we can.

Euclid, I would like to thank you personally for the words of wisdom and add another analogy to yours of the pilot and standards. You talk about a pilot and you hope that he is conforming to standards, just think next time that you go to the doctor that most doctors can get six out of ten answers wrong and still qualify.

JOHN GRIFFITHS: Again I would like to and not to seem repetitive, but to give my thanks to Euclid and Rosemary. I am sorry I didn't get around to telling you more sea stories, Euclid.

EUCLID HERIE: Don't worry, I will come and visit you in Cornwall.

JOHN GRIFFITHS: I get an awful lot out of these sorts of meetings, being a sort of techi. We interchange ideas, they may not be in the forum but they are outside, and they are very necessary that we communicate, I think that is what this meeting is all about, we communicated. Thank you.

MATTHIJS BALFOORT: In the first place I would like to thank my host. In my role as observer from the section of the Blind. IFLA, I think I will send a report to the section about this meeting, I hope we can discuss it in August in Istanbul, including the suggestion that we will take over these kinds of meetings. We should have done it before I think. And I hope that the section will do a lot of good work in the future combining all these libraries and all these thoughts about working together. Thank you.

JOHN SIMPSON: I want to add my thanks to those that have already been expressed to Euclid and Rosemary and the staff of the CNIB for the hosting of us over these last few days and the opportunity that that has presented both within this meeting and at CNIB to have a look at their services.

I also reflect on my own situation. I come to this meeting wearing a number of hats. You have already heard of the references to the project that we have underway in Australia to combine major libraries to provide better services, and I have had a most stimulating involvement in that process over the last few months.

I am also involved with the National Federation of Blind Citizens as one of its leaders and have another hat that I am about to put on when I leave here to go and look at radio reading services both here in the US, because I earn a substantial part of my living as executive officer of the Australian Association.

I say all that because it demonstrates in my mind something of the complexities of what we are dealing with here. On the one hand we are talking about very specialist services for a minority group in the community, we are talking about talking book library services, however they might develop and I guess one of the lessons over the last few days is to look to those services being a speciality, but keeping fully in touch and taking full account of what is happening in the wider technological area. Even the concept of talking books, I guess, is something that is linked to this particular point in time and will change. We are of course talking about the wider issues of information services to blind and other print handicap people. So it has been an interesting few days, and I guess the other sort of dichotomy that we have deal with is this whole issue within the structure of trying to develop an effective communication mechanism between us that without that being bound up by bureaucracies and organizational structures that tend to take on a life of their own, and to address those things in the last three days has certainly raised many additional questions in my mind.

I thank you, Kurt, for your chairmanship of the proceedings and the stimulation to my thinking that the whole discussion has given me. Thank you.

JON ISAACS: The two methods that I find most encouraging coming out of this conference is first the recognition by the Library of Congress of the need for engaging in this open and consultative process, I don't form that view just as a result of this conference, but their actions leading up to it as well.

As I mentioned at the start we had the pleasure of having John Cookson visit Australia earlier this year with the full support of the Library of Congress and that did a great deal for Australian participants in this process, consumers and service providers to recognize the role which the Library of Congress is playing and the way they are receptive to this information flow, and that has been evident this last two or three days.

The second source of encouragement that I get is the clear commonality of view of the digital path and whatever the final delivery mechanism might be it is quite clear that we are at one in terms of digital technology and that is very encouraging from the point of view of countries like Australia where we aren't going to be pioneers, we can't afford to be, but we do intend to be very much with the mainstream of service delivery. So from that point of view this forum has been extremely valuable.

I would like to thank also the host, Rosemary and Euclid. I echoed the comments made by Stephen King. I was here in July last year and there is no question of the competence and professionalism of the CNIB library. And to you Rosemary, my congratulations on the very excellent way you have conducted this library and given such tremendous benefits to your consumers.

To you, Kurt, I also thank you, not so much for your calmness and sweetness and light, that isn't your forte and you don't seek to portray that, but for your forthrightness and for the very deliberate way you make sure we cut out the nonsense and deal with the very tough issues.

Finally I have got two advertisements to make. The first is to invite all of you to Sidney at the end of July and into early August and I will distribute a leaflet accordingly, a little yellow one which invites you all to participate in a conference called; Negotiating the Information Super Highway with a Print Disability. It is a forum put on by all the library and related agencies for the blind and visually impaired people in Australia, and you are most welcome to attend that.

The second advertisement is I have got a flyer offering sales of their talking book masters, and just to show you how generous a participant we are I intend to give the Canadians a copy of their full catalogue of children and adult books and of course in the hope that they might purchase some of their masters. Thank you very much.

EUCLID HERIE: Well, thank you very much all of you that have spoken. As a friend once said to me, he said, "Euclid, praise and flattery are like chewing gum, should be enjoyed but not swallowed." You have been very kind in your remarks.

You know we, like every organizations do things based on our own sense of priorities and the use of our time and resources, and I would have to be completely honest to say that it has been a privilege for us, as I said, at the opening to have hosted this because of course it is an opportunity to show case what we do, not only that, but the competence of our personnel.

I should also mention again that we are the local arrangements committee and that Mr. Cylke and his office really did all of the organizational work and the agendas and all of that material. It was very much a joint effort, because as I said at the dinner we are colleagues and good friends and we do work very closely.

I too have one little advertisement, but really just a piece of information because it may interest some of you or other organizations in your country, and that has to do with my hat as the Chairman of the International Organizing Committee with the World Blind Union Fourth General Assembly, and just so you have the dates, August 22 to 24, 1996 in Toronto will be a World Conference on the Status of Blind Women, and then the assembly itself will be the 26th to the 31st of August here in Toronto.

We will only have forty exhibit spaces because of the limit of the size of the hotel we are using. I don't know how much the booths will cost, but we will be mailing to the six hundred members of the World Blind Union and to all of the commercial people, probably late May when we finally finish the materials we are preparing now because we only have a year to do this, information on that.

So, for any of you who are thinking next year that you are going to have more and exciting stuff to show and tell about you have another chance, and it will be my privilege to welcome you, your guests, whatever, back to Toronto next year.

I should explain that if you are not a delegate to the World Blind Union you can apply for associate membership through your national delegation. Observer status is permitted. You have to be approved as an observer, but we are hoping that people will take advantage of that. There is limited space. Just so you know about that and if others ask you about it that will be the next forum here in Canada. Thank you.

HIROSHI KAWAMURA: I would like to thank Euclid, first of all, for providing us with a very good hospitality, also an enjoyable atmosphere of the whole meeting.

Also I would like to thank Kurt to extend your initiatives to hold this most important conference here. Japan Braille Library has been invited for the first time for this meeting, but I am sure libraries for the blind in Japan will be most interested to take part in this type of meeting for the future.

I would like to mention in a very brief way on the situation in Japan. We have almost three hundred libraries serving the blind including two hundred public libraries who are producing talking books. This enormous number of talking book producers are waiting for the next generation of talking book production system. So, that is why this meeting is very important for us, and from next week we are going to evaluate a prototype and we will decide within two years for the next production system in Japan. I suppose.

Finally, on behalf of the section of libraries for the blind of IFLA I would like to attract your attention to the nature of IFLA. IFLA is initially a voluntary organization, volunteer basis organization so it means IFLA will just give you an umbrella, the contents is yours. So I would like to welcome all of you to take part in IFLA in a very active way. Thank you.

JUDITH DIXON: Thank you. In addition to thanking CNIB, I would like to thank those of you who are service providers who are not blind. I think that sometimes those of us who are professionals but who are blind we know why we are doing what we are doing, but I think the commitment that is demonstrated by those of you who are not blind is really observable and very much appreciated.

It is not an easy thing to involve consumers in what you are doing, and I don't think anyone is going to intentionally set about to just do something without the benefit of consumer participation, but to make sure that that participation is meaningful and relevant and substantive is not an easy thing and is one that has to be given a great deal of thought.

The other point that I would like to make is, when we are talking about all of this digital activity, and we have been focusing primarily this weekend on audio materials, and audio materials are very important because they benefit those blind people who weren't fortunate enough to become blind at an earlier age. But I think such digital activity can also have the benefit of enhancing our braille abilities as well. And braille is an extremely important literacy medium, and let us never thing that because of the proliferation of audio materials and because of the wide acceptability of audio materials that that in any way negates the value of braille because braille is still a tremendously important medium to literacy and one that many of us use very effectively. Thank you.

KURT CYLKE: Just one comment, because I am going to have to leave and let Euclid close the meeting, but in the area of braille what you should know, many of you from Europe, that we have recently given to the National Council for the Blind of Ireland a complete copy of our braille collection from volume 1 to date. So they have the largest braille collection of English language braille in the world at the moment, in Europe. They have it in the warehouse and I am sure it is not on the shelves as yet. I get kind of worried when we talk of hundreds of boxes. But Des Kenny indicted that he would agree to loan to Europe and take care of that part of the world. So in a year or so, it will take a while, you will have a fresh braille collection which should help out.

WELLS B. KORMANN: I too would like to thank Euclid and Rosemary for their gracious hospitality. I am new to NLS and this meeting. I greatly enjoyed it and I saw some very interesting systems, Quatro, Daisy, Plextor. You know, technology does move fast and it is shrinking, it is hard to pick the right one.

I used to work for the navy on aircraft systems and we had the same problems that everyone is facing here in this room. In the navy if you could save one pound of aircraft equipment it would equate to $1 million worth of savings in terms of equipment and fuel.

We have seen in the navy, for instance, in a five-year period going from a forty pound piece of equipment called the global positioning system, the 3A receiver down to a two pound hand held GPS system down to a GPS cord that weighed ounces, and that is in a five year period. That is how fast technology is moving. So that's what makes it really difficult when you are trying to select a technology here to go with. We have to keep an eye on CDs, the video disc and silicon technology, they are all out there, they all have great promise and I think it is really important that we just stay in touch with one another. Thank you.

MARY SCHNACKENBERG: Thank you. I would also like to thank Rosemary and Kurt. We have had a wonderful week and wonderful hospitality. For me this conference is about access to reading. There are many different ways in which we read, and the discussion about the digital technology is just another of them, and it is really access to the world of print, access to what sighted people take for granted.

There are times when sometimes people wonder why we get a bit excited about certain things, maybe it is to do with the fact that I do not regard reading as a right, for me it is a privilege and I have to work very hard at that. It is great fun that this conference expands that concept of reading. Thank you to all the engineers, the librarians and everybody involved in extending the ability to read.

CLIVE LANSINK: Now, my job as a professional is to run a computer system, and I have from time to time wonder why I am here. But there is no doubt in my mind really why I am here. I am here first and foremost as a consumer, but I have some technical knowledge which I may have an opportunity to contribute. It has been nice to talk to the engineers who are working in the digital field, and that has been nice at that level. But above all for me it is clear that talking books and braille and any kind of specialized material for blind people is a scarce international resource, and really although there are much much bigger players in the game than New Zealand, there is no doubt that blind people internationally are affected by decisions that are made.

Why are we here? I guess because it helps us in our own country to plan when we feel involved and when we know maybe that the digital revolution isn't going to be next year but maybe, I don't know, five, ten years time or whatever and as that time approaches we are part of the process by being able to make a contribution to the development of a new format and by being able to indicate to our management when to start planning for whatever change will be.

We would not want to, of course, wake up one morning and find that two or three people got together last weekend and now this is a new format and that is it. That is why we are here. We want to be part of it, and I think that we have been. So, thank you to the hosts, Euclid and Kurt. I take it Kurt have left now. But thank you to the CNIB and the Library of Congress for hosting this meeting. Yes, we were part of the group that kind of asked to come along, and I hope that that is understood now as to why that happened.

There is no doubt in my mind, I think, that those of us who did ask to be included are signalling our interest at being involved and that this is an international topic. At the end of the day people will still make their decisions, but they may make them in perhaps the greater knowledge of what other countries have been able to bring. Thank you.

ROSEMARY KAVANAGH: On behalf of the CNIB Library and our staff we do want to say how very much we appreciate your kind words and that it was great for us to have you all here. Very often we tend to underestimate the power of information and the devastation of non information. And for me that is what was most significant about all of this.

Sometimes we sit and we worry, Gee, it cost $5,000 or whatever it is to send somebody somewhere, but we very rarely look at what it would cost us if we didn't go and didn't gather the information and didn't put it into place early enough, and we can spend a lot of time, very expensively, spinning our wheels.

I put a lot of value on getting information early, getting it quickly, and forums like these are very useful for putting us in touch, because without it, for instance, we would not have know about some of the systems that were discussed here, we wouldn't really know what the trends are, and what in terms of time we are dealing with, and for us that is very critical, because we are a privately funded charitable organization, we don't get any funding from governments, this is the CNIB library doesn't get any funding from governments and we make up some of our revenue by

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selling some of the things that we do, and therefore, for us staying on top of the technology and the latest techniques in terms of production is quite critical.

In fact we have given our board a commitment that we would be reducing the dependence on charitable donations by trying to escalate some more of those earnings. Whether we can do it or not I don't know, but it is a challenge we have given ourselves. And so for us how quickly we get a hold of the kinds of information we need in terms of applying it to the things we do is very important to us. We aren't in the research business but we are in the application end of it. And so for us this is very important.

The last thing I would like to endorse is a comment from Hiroshi that he mentioned about IFLA being a volunteer organization, we should remember that. Because an organization, like an army, is as strong as the soldiers you put in it, and if we don't send the kind of volunteers who will make changes, and if we aren't forceful about demanding those changes ourselves then nothing will happen. So those are my comments that I will like to leave us with today.

LYNN LEITH: I would like to keep this short and sweet. I have enjoyed meeting all of you, talking with you. The information exchange, the ideas, for me that has been the important of this. I am not a techi, I am not an engineer, but I have been in this business for over fifteen years so I have an idea what is going on, and it has been wonderful talking with you.

Susanne said that we have just touched on the topics, and I sort of look at it as we are just sort of seeing the tip of the iceberg and we have a long climb ahead of us and if we work together and we stay in touch then maybe it wouldn't take us quite as long to get to where we want to be. So, thank you, all of you.

KOEN KRIKHAAR: I would simply like to thank the CNIB for the opportunity for me being here. Being in the role of an observer is a luxurious position to be in and I enjoyed it very much. I learned a lot of things, I met a lot of pleasant and interesting people. I feel encouraged to make the first step to go into a digital production stage to experiment with that, and I am grateful for that. So thank you very much.

EUCLID HERIE: Is that it? Okay. We are finished. I just want to say that in my career at the CNIB I have been fortunate to have attended ten years a world forum on low vision held here in Canada. In 1988 the Australians invited about twenty five organizations to a forum on the future of the blindness system, and four years ago in Japan they hosted a forum on blindness and aging in the world, and in all of those forums the proceedings have been published.

I don't personally go back and re-read them, I have been honoured to present that, but I do encourage our staff and new people to look up those things, because if you bring together the best minds that you can then it is useful to revisit some of that occasionally. I would say that with this meeting, as the proceedings are available it is important that that information get communicated elsewhere. Because global travel is expensive, and we, as I am sure all of you and your employers and trustees would want to know that the maximum benefit was gained and that there was a value in it.

But having been at those kinds of forum and other things that the World Blind Union does, I have been to some IFLA meeting but mostly here in North America, and I do say that this meeting in a very short time really, because it has only been two and a half days, and that is not a very long time to get a meeting of minds and particularly with a group that doesn't know one another, there is a chemistry and all of that. I felt that, from my perspective, because I can assure you that I am extremely critical and very difficult about people travelling to meetings whether they are in a bus

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load to New York or whether they are around the world because of the cost and everything else. Our priority is service, we raise money for service and we have to be very careful about where we spend money on other things, and I know that is true for all organizations including governments.

So all of that to say that in reporting to my employers and to my council in June I will certainly say that I felt that this meeting was very constructive and very productive and it did certainly provide a good forum for the exchange of information.

I think some new friendships have been forged and some links between leading organizations in the world, and there are other players such as Germany and Spain and others who couldn't be here, but they also will get this information in one form or the other and we will continue to work with them.

So, somewhere, I have no doubt, and I think what Mr. Kormann said is absolutely so true. I know nothing about computers but this little phone I have here, the first phone I bought, you see I deal only in simple things, the first phone that I got weighed two and a half pounds, it cost $2,500 and it was good for about ten minutes talk time, and if you went by a trailer it quit, it would overheat itself and it took a day to charge the battery. And that was only six or seven years ago. This is now the third phone I have, having broken the other one, I dropped it once too often, but this little phone which still cost me $700 because of all the options that I has, but I can now call anywhere in the world with excellent quality and it weights virtually ounces in my pocket. I have absolutely no doubt that the talking book machine and whatever it will look like in two years from now or twenty years from now is probably beyond which we could even conceive at this meeting.

So I very much appreciate and I have personally got a lot out of the meeting, and I am pleased that so many of you felt positive and that you are leaving on that note and that you will be ambassadors of not only the good time I am glad to hear you had in Toronto, what you saw at the CNIB in telling our story, but also in your commitment. I am impressed by your dedication to the task, and as a blind person and as a reader I have absolutely no doubt that I would benefit from that in unimagined ways.

So we have passed the noon hour, and I would suggest that you go to the lobby, take the escalator down, there is a whole world underneath there of rooms, but you should be able to find the Simcoe room. It is a simple sit down lunch, there is no program. So enjoy the rest of your time in Canada.

--- Whereupon the hearing came to an end at 12:00 Noon.

I HEREBY CERTIFY the foregoing to be a true and accurate transcription of my Stenomask Recording to the best of my skill and ability.

B. Doucette

Barbara Doucette - Verbatim Reporter